

UNIVERSITY OF LONDON
INSTITUTE OF EDUCATION

AN INVESTIGATION INTO THE PROBLEMS OF
CURRICULUM PLANNING AND DEVELOPMENT IN
GEOGRAPHY WITH SPECIAL REFERENCE TO THE
CURRICULUM OF THE SECONDARY SCHOOLS OF
PORTUGAL

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ABSTRACT

This study aims to investigate problems of curriculum planning and development in geography, with special reference to the curriculum of Portuguese secondary schools. It identifies the theoretical and practical influences which affect curriculum planning and development and gives some suggestions and a rationale that can be employed to overcome these problems.

The theoretical bases of curriculum planning and development in general and of curriculum planning and development in geography are examined first.

Following this theoretical background, the evolution of geographical education over the past 150 years is indicated in order to contribute to an awareness of curriculum change in the past.

In order to obtain evidence of the present main problems concerning geographical education and to collect opinions on how to improve it, questionnaires were sent to geography teachers in secondary schools.

Questionnaires were also sent to 9th year and 12th year students respectively, (approximately 15 and 18 year old) to ascertain their views about geography and its teaching.

To discover how the process of curriculum planning takes place at school level, interviews were undertaken with the heads of geography departments of eight secondary schools which differ in several aspects, e.g. in location, in type, in size, in number of geography teachers and their qualifications and in the availability of teaching resources, among others.

In order to find out how the process of curriculum planning has evolved since the revolution of April 25th 1974 interviews were conducted with curriculum planners.

Lastly, strategies and conditions needed for curriculum development in geography are put forward.

The essential conclusions of this investigation are that in order to improve the delivery of the geography curriculum in Portugal it will be necessary: first, to develop the links between the central, regional and school authorities; secondly, to raise the level of qualifications of teachers of geography; and thirdly, to increase the resources available to schools' geography departments. Consequently the quality of delivery of the curriculum will depend on teachers having expertise in school-based curriculum development.

The possible ways of extending this study are also discussed in the final chapter.

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

BTEC	Business and Technical Education Council
CAL	Centro de Apoio Local - Projecto Minerva (Local Support Centre - Minerva Project)
CALUSG	Computer Assisted Learning in Upper School Geography
CBD	Central Business District
CEE	Certificate of Extended Education
CIFOP	Centro Integrado de Formação de Professores (Integrated Centre for Teacher Training)
CPVE	Certificate of Pre-Vocational Education
CSE	Certificate of Secondary Education
DES	Department of Education and Science
DGEBS	Direcção-Geral dos Ensinos Básico e Secundário (Directorate General for Basic and Secondary Education)
DGES	Direcção-Geral do Ensino Secundário (Directorate General for Secondary Education)
DRE	Direcção-Regional de Educação (Directorate Regional for Education)
EEC	European Economic Community
ESCP	Earth Science Curriculum Project
ESE	Escola Superior de Educação (Higher School of Education)
GA	Geographical Association
GCE A-level	General Certificate of Education Advanced level
GCE O-level	General Certificate of Education Ordinary level
GCSE	General Certificate of Secondary Education
GEP	Gabinete de Estudos e Planeamento (Planning and Research Bureau of the Ministry of Education)
GFR	German Federal Republic
GSIP	Geography Schools and Industry Project
GYSL	Geography for the Young School Leaver

HMI	Her Majesty's Inspector
HMSO	Her Majesty's Stationery Office
HOD	Head of Department
HSCP	High School Geography Project
IVA	Informática para a Vida Activa (Computers for the Active Life)
LEA	Local Education Authority
MACOS	Man: A Course of Study
ME	Ministério da Educação (Ministry of Education)
MEC	Ministério da Educação e Cultura (Ministry of Education and Culture)
MEIC	Ministério da Educação e Investigação Científica (Ministry of Education and Scientific Research)
MEN	Ministério da Educação Nacional (Ministry of National Education)
NFER	National Foundation for Educational Research
OECD	Organisation for Economic Co-operation and Development
RGS	Royal Geographical Society
R's	(the 3 R's) reading, (w)riting and (a)rithmetic
SEE	Secretário de Estado da Educação (Secretary of State for Education)
SEEBS	Secretário de Estado do Ensino Básico e Secundário (Secretary of State for Basic and Secondary Education)
SEEJ	Secretário de Estado da Educação e Juventude (Secretary of State for Education and Youth)
SGL	Sociedade de Geografia de Lisboa (Geographical Society of Lisboa)
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USA	United States of America
UK	United Kingdom

CHAPTER 1

Introduction

1.1 Preamble

The rapidity with which curriculum change at secondary education level has occurred in Portugal in the two last decades and specially in the last fifteen years contrasts with the curriculum stability of the previous forty-five years.

Much curriculum change since the revolution of April 25th 1974, was unplanned, and the curriculum was altered particularly as a result of political influences.

In 1986 the 'Comprehensive Law on the Education System'¹ was approved which gave the possibility of launching a global reform of the education system².

The global reform proposal produced by the Committee of the Reform of the Education System was published in July 1988³ and on the 29th August 1989 the general principles of basic and secondary education curricula were published by the Government⁴.

During the 'New State' ('Estado Novo') regime that is, during the regime under which Portugal was ruled from 1926 to 1974, the importance given to geography in the secondary school curriculum varied, but the content of geography syllabuses was never altered in depth.

On the contrary, after the revolution of April 1974, not only was the importance given to geography in the curriculum changed, but also geography syllabuses were much modified. Nevertheless these alterations were introduced, year by year, and were not based on a general curriculum plan. As a result, many geography teachers expressed the idea that it was necessary to change the geography curriculum.

1.2 The Problem

The main purposes of this research is to analyse the existing geography curriculum at secondary education level in Portugal and investigate the problems of planning and developing the geography curriculum, under the hypothesis that the

inadequacy of the present curriculum structure arose from the fact that, after the revolution of April 1974, curriculum change was not undertaken in accordance with a general curriculum plan and had not been followed by the necessary alterations in processes, nor of educational structures.

At the time the study began, it was the researcher's contention that curriculum change had been influenced by the following aspects:

a) The total secondary education curriculum structure

Changes in the geography curriculum depended on the total secondary education curriculum structure and on the place of geography in this curriculum. Changes introduced in the total secondary education curriculum structure and in the geography curriculum could be explained by organizational and administrative decisions (due to cultural, political, social and economic influences); by educational theories (especially concerning child development and psychology); and by ideological changes (Kelly, 1980).

b) Historical

Some of the changes introduced in the geography curriculum have been influenced by the traditions of curriculum organization in geography.

c) Curriculum planners' attitudes and values

Curriculum planners' attitudes and values have been strongly influential in the curriculum organization process.

d) Teachers' attitudes and opinions

Geography teachers' attitudes and opinions about the geography curriculum have been influential since teachers had to put the curriculum into operation.

e) Students' attitudes

Students' attitudes towards learning geography have also been influential.

f) Academic and training courses and university teachers

Academic and training courses exerted an influence on curriculum planners and on geography teachers as well as university teachers who had a role in curriculum planning.

g) Examinations and entry requirements in higher education

Examinations and entry requirements exerted an important influence particularly in the curriculum of the three terminal years of secondary education.

The researcher believed that an awareness of the different influential aspects on curriculum planning and development could provide the parameters within which curriculum planning could be undertaken.

Besides influences on curriculum planning, the researcher set out to investigate constraints on curriculum development:

- a) It was the researcher's contention that the institutional context may offer several constraints for curriculum development which result from an inadequacy of the educational structures at different levels: central, regional and local. For instance, the insufficiency of support given by the central administration to schools and to teachers (for example, financial, organization of in-service training, and so on); a deficient development of regional structures and an insufficient number of equipped rooms, teaching resources, trained staff and poor school organization could be serious constraints for curriculum development.
- b) The researcher also believed that the attitudes of heads of departments of geography, geography teachers and students could also be constraints for curriculum development due to resistance or inadaptability to innovation, specially explained by the fact that innovation was not followed by the needed alterations of educational structures. The researcher considers that geography teachers' and students' attitudes towards curriculum innovation are fundamental to the process of curriculum development.

Though it was also the researcher's contention that parents, textbooks writers and publishers could also be influential on curriculum development, this aspect was not developed in this work.

1.3 Methods of investigation

Questionnaires

In order to investigate the problems of present curriculum structures, the advantages and disadvantages of the existing syllabuses, to acquire knowledge of the way geography is taught and under what circumstances, a survey of secondary education teachers by mail questionnaire was conducted.

The questionnaire asked about the schools, the teachers, the way teachers taught geography, as well as teachers' opinions about the curriculum structure and the syllabuses. It also asked teachers to express their opinions on how geography could contribute to the attainment of aims of education and schooling, ways of improving the geography curriculum and the main constraints for curriculum development. The questionnaire was sent to all Portuguese state secondary schools (excluding the Açores and Madeira).

Questionnaires should provide information about geography teaching realities including constraints for improving geography teaching, such as: finance, insufficiency of trained staff, insufficient number of specially equipped geography rooms, teaching resources, difficulties in undertaking fieldwork, problems arising from the present curriculum structure, existing syllabuses and timetable; poor central, regional and school organization; insufficiency of opportunities for teachers to attain in-service courses. All these aspects as well as teachers' opinions on ways of improving the geography curriculum, the syllabuses and the learning of geography, have very important implications for curriculum planning and development.

It seemed appropriate also to ascertain the views of students about geography and geography teaching. A sample survey of 9th year and 12th year students by questionnaire, administered in classes, by their own teachers, was also conducted.

The 9th years pupils' questionnaire asked about the relative popularity of geography among their other curriculum subjects, the reasons why pupils were interested or not in learning geography and different aspects of geography and asked pupils to make comments and suggestions about the existing geography

syllabuses and about geography teaching.

The 12th year students' questionnaires covered a range of issues from the reasons why they chose the subject, their perceptions of both the pedagogy and content of the 12th year course, the relevance of the geography they learned and also asked students to make comments and suggestions about the existing geography syllabuses and about geography teaching. Both questionnaires also asked for students give a definition of geography.

Students' attitudes and opinions should provide some insight into factors which motivate and captivate their interest and make a geography course a worthwhile learning experience. Obviously students' opinions and attitudes towards geography courses have also important implications for curriculum planning and development.

Interviews

In order to look into curriculum planning and development realities at the general and instructional levels it seemed appropriate to undertake interviews with curriculum planners and with heads of departments of geography (HOD). It was felt that interviews with HOD of various schools should draw out evidence of the process of planning at school level (sources of influence and constraints) and consequently bring out some evidence of the major problems that schools have to cope with in developing the geography curriculum. HOD' opinions about how to improve the geography curriculum were also sought.

Interviews with curriculum planners should draw out some of the most important sources of influence and constraints in planning the curriculum to find out whether curriculum planners had developed a theory about curriculum planning and curriculum development and consequently evidence of the process of curriculum planning at general level and curriculum development in geography, in the last fifteen years.

Historical research

In order to be aware of the process of curriculum change in geography it seemed appropriate to undertake an analysis of the historical evolution of

geographical education in Portugal which should bring some understanding of the dynamics of change, of the relationship between geographical education and the cultural, social, economic and political situation it operated, and an increased understanding of contemporary problems for improving geographical education.

To study the evolution of geographical education, primary and secondary sources were used. The primary ones were mainly legislation and other official documents.

An extensive review of the literature concerning the problem of the thesis was undertaken. For reasons of availability, this is largely based on Portuguese and UK sources, but some of the issues raised through the literature transcend national boundaries.

Unfortunately, research in geographical education is just starting in Portugal now. Some articles have been published on the existing syllabuses, on the new syllabuses on trial now, which are essentially the result of authors' reflections on them and of their own experience in teaching them. To the researcher's knowledge, nothing has been published by Portuguese authors, on curriculum planning and curriculum development in geography, until now. The insufficiency of research in geographical education is also a very important constraint for curriculum development.

This thesis is being submitted to a UK institution and, as such, some comparisons between Portugal and Britain are presented through this work.

1.4 The importance of a study of the Portuguese geography curriculum

- a) A first reason which makes this study important has already been stated: many geography teachers expressed the idea that it was necessary to modify the geography curriculum. This idea was expressed informally during meetings or on papers or communications (Silva, 1982; Galego, 1984; Melo, 1984; Navarro, 1986; Gomes, 1988).
- b) Criticisms of the existing syllabuses varied; in order to provide sound bases for curriculum planning and curriculum development it is necessary to know what the main problems are of the geography curriculum structure; the

advantages and disadvantages of the existing geography syllabuses; how geography contributes to the attainment of the aims of schooling and education; the way geography is taught and under what constraints; teachers' and students' attitudes towards the geography curriculum; teachers' and students' opinions on how to improve it; sources of influence and constraints on heads of departments of geography and curriculum planners work.

To provide a contribution to curriculum planning and development in geography in Portugal was one of the aims of this work.

- c) A third reason for the importance of a study of the problems of curriculum planning and development in geography is the fact that only through a rational development of the curriculum process in geography, can the subject aspire to secure a place in the curriculum and contribute to the attainment of the goals and aims of education stated in the 'Comprehensive Law on the Education System'.

1.5 The structure of the thesis

On the grounds that this work is being submitted to a university in the UK, it was felt appropriate to devote Chapter two to a short description of the Portuguese education context.

Chapter three presents the theoretical bases for curriculum development in general - curriculum planning models; curriculum implementation; curriculum evaluation; influences and constraints on curriculum planning and curriculum implementation; arguments for a planned curriculum centralized, decentralized).

Chapter four presents the theoretical bases for curriculum development in geography - historical perspectives; curriculum planning models in geography; curriculum planning in geography at the general and instructional levels. As examples of curriculum development in geography some aspects of two American Development Projects - the Earth Science Curriculum Project (ESCP) and the High School Geography Project (HSGP) and of three British Development Projects: the Geography for the Young School Leaver Project (GYSL); the Geography 14-18 Project; and the Geography 16-19 Project are presented.

Chapter five presents a historical perspective of the evolution of geographical education in Portugal, in order to contribute to an awareness of the process of curriculum change in Portugal and its consequences for curriculum planning and development now.

Chapters six, seven and eight analyse the situation of geographical education now and provide enlightenment for the understanding of the existing problems of curriculum planning and development in Portugal.

Chapter nine presents the conclusions of this thesis with some suggestions for the process of curriculum development in geography in Portugal, as well as for future research.

CHAPTER 2

The Portuguese Context

2.1 Some geographical features

The Portuguese territory includes a continental part (which corresponds to 96.7% of the total land area), and the Açores and Madeira Islands. The total area is of 91,985 km². The continental part covers a little more than 15% of the total land area of the Iberian Peninsula (Medeiros, 1987).

Map 2.1 shows evidence of the contrast between the altitude of the northern and southern regions of Continental Portugal. To the North of the river Tagus (rio Tejo) is located 95.0% of the land area which is over 400 m high. To the South of the same river is located 61.5% of the land area which is below 200 m high (the average altitude of the Portuguese part of the Iberian Peninsula is 240 m; of the Spanish part 660 m (Medeiros, 1987).

Map 2.2 shows the distribution of precipitation, the northern part of the country receives the largest amounts of precipitation, but in certain areas there are also important differences between the coastal and interior areas (namely between the Northwest and Northeast of Continental Portugal). The influence of the relief is also evident (Medeiros, 1987).

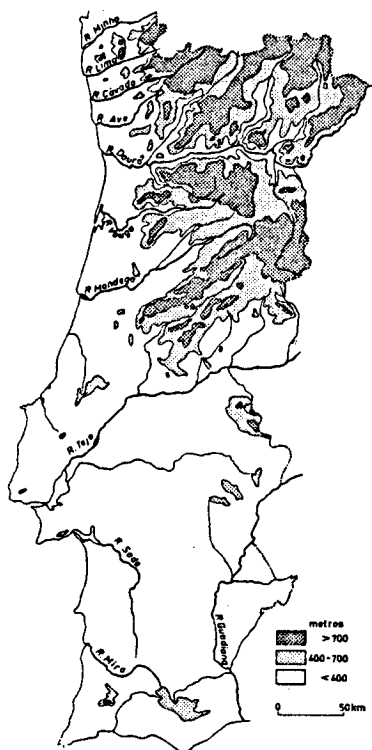
Map 2.3 shows the distribution of climatic regions of Continental Portugal (Daveau, 1985).

Map 2.4 shows the distribution of population densities in 1981. There are very important differences both between northern and southern parts and western and eastern parts of Continental Portugal. In 1981 the average density of Portugal (the Açores and Madeira included) was 106.7 hab/Km².

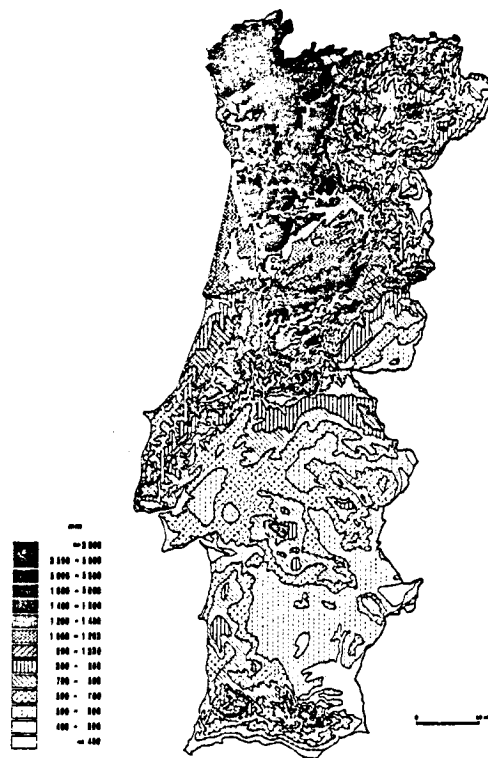
Table 2.1 shows evidence of differences in population densities between regions (Gaspar, 1987).

Map 2.5 and Table 2.2 shows the average annual growth of the population in Portugal between 1970 and 1980. The positive growth of population in the western regions, Algarve and Madeira, contrasts with the negative growth of the eastern regions, Alentejo and the Açores (Nazareth, 1988).

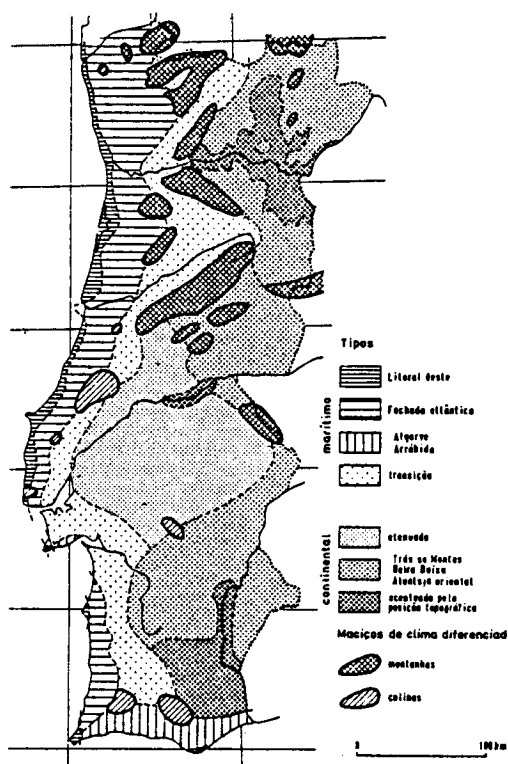
Map 2.6 shows the distribution of the workforce by activity sectors, in 1981.

**Map 2.1**

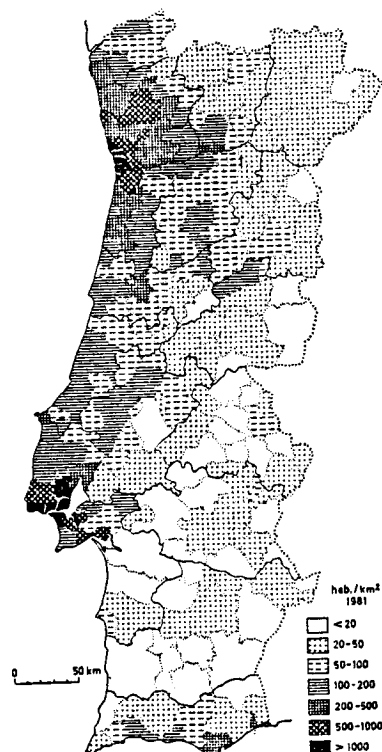
Hypsometric map of Continental Portugal.
(Medeiros, 1987, 41)

**Map 2.2**

Continental Portugal - Distribution of annual precipitation, by Suzanne Daveau, 1977, in accordance with an adaptation from Bodo Freund, 1977.
(Medeiros, 1987, 94)

**Map 2.3**

Continental Portugal - Climatic regions (provisional sketch), by Suzanne Daveau, 1985.
(Medeiros, 1987, 99)

**Map 2.4**

Continental Portugal - Population density by 'concelhos', 1981.
(Gaspar, 1987, 21)

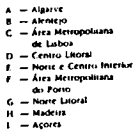
Table 2.1
Area and population density by regions
(1960, 1981)
Portugal

Regions	Area (sq. km)	Densities (persons per sq. km)	
		1960	1981
Norte Litoral	6 339.66	198.0	227.8
Norte e Centro Interior	28 003.19	58.6	46.9
Centro Litoral	17 667.44	110.3	115.7
Alentejo	27 059.86	28.5	21.6
Algarve	5 071.60	62.1	63.8
Área Metropolitana do Porto	803.21	1 040.7	1 391.8
Área Metropolitana de Lisboa	3 548.50	429.9	706.6
Região Autónoma da Madeira	754.04	356.7	335.3
Região Autónoma dos Açores	2 892.28	113.2	84.2
Portugal	92 139.78	96.5	106.7

(Gaspar, 1987, 22)

A contrast between the western regions of Continental Portugal (with the exception of the district of Viana do Castelo), Algarve and Madeira and the eastern regions and Alentejo is also evident. In these latter regions there are large percentages of workforce belonging to the primary sector, specially in the districts of Vila Real, Bragança and Viseu, respectively with 54.0%, 52.2% and 50.5% of the workforce belong to this sector. In the western areas (the district of Viana do Castelo excluded) the biggest percentages of workforce belong to the secondary or tertiary sectors. In the districts of Braga, Aveiro and Porto more than 50.0% of the workforce belong to the secondary sector, respectively 56.4%, 53.5% and 51.3%; in the district of Lisboa 63.3% belong to the tertiary sector ¹ (Fonseca and Abreu, 1984).

Map 2.7 shows the distribution of urban settlements in 1981. The major contrast is between coastal and inland regions, but there is also a contrast between the North and South of Continental Portugal (Medeiros, 1987).



Map 2.5
*Portugal - Average annual growth of the
population, 1970-1980.*
(Nazareth, 1988, 63)



Map 2.6
Portugal - Distribution of workforce by activity sectors, 1981.
(Fonseca and Abreu, 1984, 133)



Map 2.7
Continental Portugal - Distribution of urban settlements, 1981.
(Medeiros, 1987, 236)



Map 2.8
Portugal - Administrative division (districts).

Table 2.2**Population growth in Portugal and in Portuguese regions
(1930-1980)**

Regions	Average annual total growth (%)				
	1930/40	1940/50	1950/60	1960/70	1970/80
Algarve (A)	+0.78	+0.27	-0.42	-1.56	+1.92
Alentejo (B)	+1.45	+0.53	-0.40	-2.48	-0.30
Área Metropolitana de Lisboa (C)	+1.56	+1.49	+1.24	+1.35	+2.62
Centro Litoral (D)	+1.15	+0.88	+0.30	-0.32	+1.16
Norte e Centro Interior (E)	+1.21	+0.63	-0.19	-2.19	-0.14
Área Metropolitana do Porto (F)	+1.56	+1.14	+1.25	+1.00	+1.73
Norte Litoral (G)	+1.40	+0.91	+0.42	-0.36	+0.74
Madeira (H)	+1.62	+0.79	-0.03	-0.61	+0.28
Açores (I)	+1.03	+0.89	-0.08	-1.40	-1.40
Portugal	+1.24	+0.89	+0.48	-0.21	+1.29

(Nazareth, 1988, 61)

Finally, Map 2.8 shows the administrative division (districts) of Continental Portugal.

2.2 Some educational aspects

Specially significant for the education system is the youthfulness of the Portuguese population, which nevertheless shows a general tendency to reduce the relative percentage of population under the age of 19 (1960 - 37.6%; 1970 - 36.9%; 1980 - 34.3%)² (Nazareth, 1988, table 65). Again in 1980, Portugal had 25.5% of its population under the age of 14 (total 2,508,673) which in the year 2000 will be reduced to between 18.8% and 19.1% (about 400,000 fewer young people under 14 in the year 2000) (Nazareth, 1988, p. 171).

Compulsory schooling was still only four years till 1964 when it was extended

to six years (four years of primary education and two of preparatory education). It covers nine years for pupils who enrolled in the first year of basic education in or after the 1987/88 school year and compulsory attendance of basic education ends at 15 years of age (articles 6 and 63 of the Comprehensive Law on the Education System).

Nevertheless, in 1989/90 the attendance rate was not 100%, even for pupils under 14 which is the age of compulsory attendance for pupils who enrolled in the first year of basic education before 1987/88.

Table 2.3

Attendance rate by age (%)
Continental Portugal

Another problem is the percentage of pupils who failed a class and have to remain in the same class for a further year.

Table 2.3 shows that the attendance rate has been increasing and Table 2.4 that the percentages of pupils who failed classes has been reducing, but these are still two important problems to solve and demand a lot of material and human resources. Obviously the extension of compulsory schooling from six to nine grades also creates the need for extra resources.

Another serious problem consists of the excessive use of the teaching accommodation of some basic and secondary education schools as well as the scarcity of teaching resources.

Ages	School years	
	1985/86	1989/90
6	100	100
7	100	100
8	100	100
9	100	100
10	100	100
11	100	100
12	92	92
13	82	83
14	66	75
15	45	72
16	40	69
17	37	60
18	30	37
19	22	23

Source: GEP (Planning and Research Bureau) -
(GEP, 1990 a, 23)

Secondary education teachers have different academic and training qualifications:

Teachers 'profissionalizados' - teachers with an academic degree and teacher training.

Teachers 'provisórios com habilitação própria' - teachers with an academic degree but without teacher training.

Teachers 'provisórios sem habilitação própria' - teachers without an academic degree and teacher training.

Table 2.4

Evolution of percentages of pupils who failed classes
Continental Portugal
Classes 1st to 9th

School years		1983/84	1986/87	1988/89
Classes				
1st cycle	1st phase	39.8	33.0	30.5
	2nd phase	28.2	24.0	19.4
5th		20.4	20.7	14.6
6th		20.4	16.8	14.7
7th		34.3	28.3	23.2
8th		32.9	32.0	21.7
9th		27.5	22.7	

Source: GEP (Planning and Research Bureau) - (GEP, 1990 a, 29)

Only about 50% of the teachers of 7th to 12th years of schooling from Continental Portugal are 'profissionalizados'.

Figure 2.1 shows evidence of the differences in teachers' qualifications according to districts. In the districts of Aveiro, Braga, Coimbra, Faro, Lisboa and Porto about 50% or more than 50% of the teachers are 'profissionalizados'. In contrast other districts have less than 50% of teachers 'profissionalizados' and specially Beja, Bragança, Évora, Portalegre.

Figure 2.2 permits a comparison between the geography group (11th A) and other groups. The percentage of geography teachers 'profissionalizados' was 40.8%; 'provisórios com habilitação própria' 42.7%; and 'provisórios sem habilitação própria' 16.5%. A comparison of the qualifications of geography teachers with other groups included in the core curriculum of the 7th, 8th and 9th years: (1 -

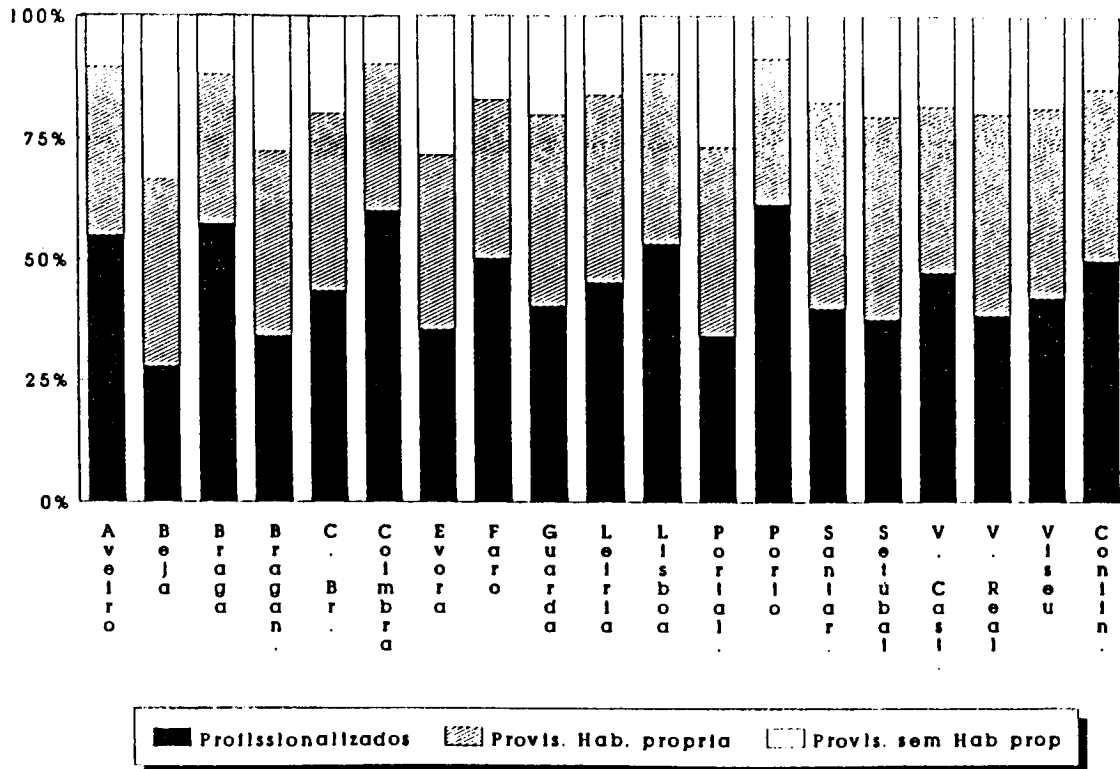


Figure 2.1

Continental Portugal - Distribution of teachers of basic (3rd cycle) and secondary education (7th to 12th years of schooling) by professional qualifications and districts, 1988-89.
(GEP, 1990 b, 51)

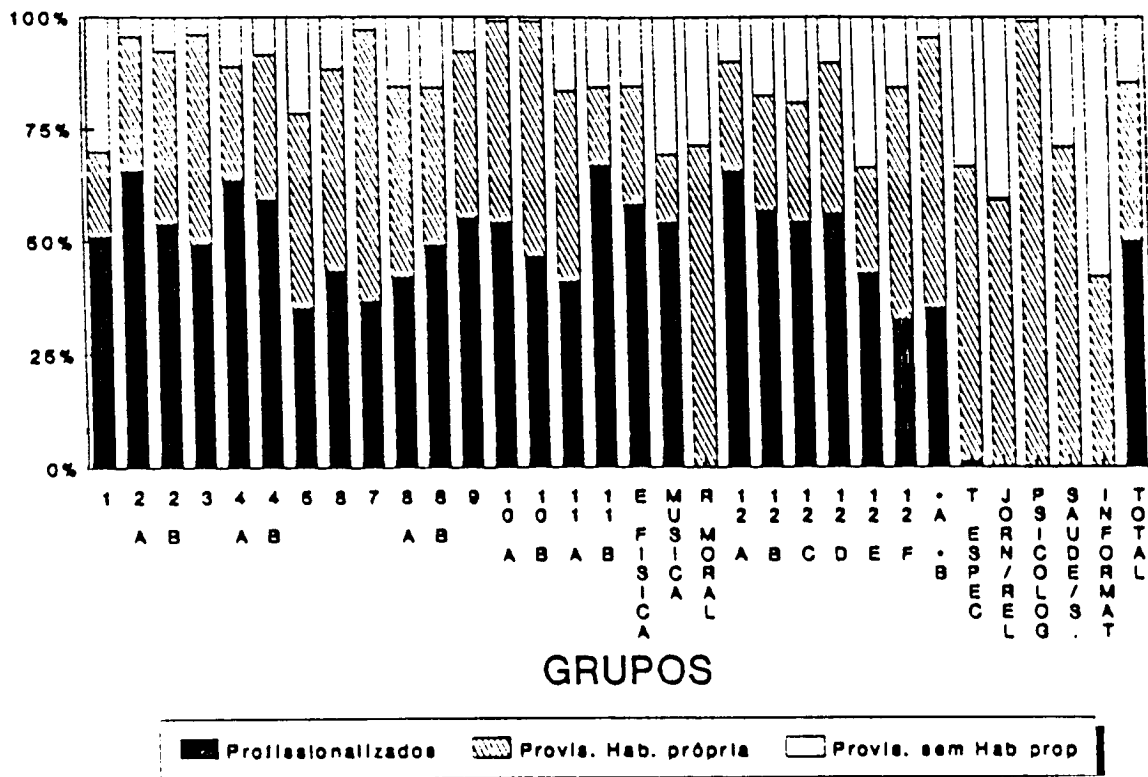


Figure 2.2

Continental Portugal - Distribution of teachers of basic (3rd cycle) and secondary education (7th to 12th years of schooling) by professional qualifications and teaching groups, 1988-89.
(GEP, 1990 b, 55)

Mathematics; 4A and 4B - Physics and Chemistry; 5 - Arts; 8A - Portuguese; 8B - French/Portuguese; 9 - English/German; 10A - History; 11A - Geography; 11B - Biology and Geology; Physical Education), shows evidence that the percentage of geography teachers 'profissionalizados' was inferior to the percentages of 'profissionalizados' of all other 'groups' except the Arts group (5th 'group').

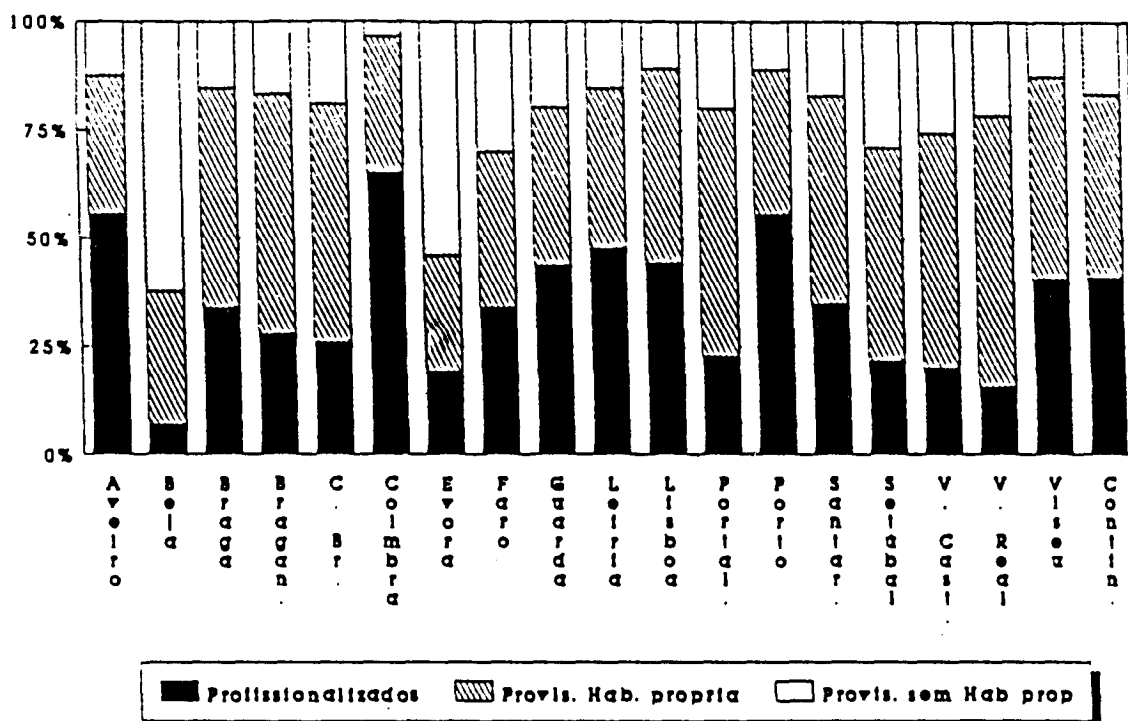


Figure 2.3

Continental Portugal - Distribution of geography teachers (11th A group) by professional qualifications and districts, 1988-89.

(GEP, 1990 b, 74)

Finally, Figure 2.3 shows that the percentage of geography teachers 'profissionalizados' varies from district to district. The districts of Beja, Bragança, Castelo Branco, Évora, Portalegre, Setúbal, Viana do Castelo and Vila Real had particularly low percentages of teachers with an academic degree in geography or in geography and regional planning and teacher training ('profissionalizados'). This problem will be approached in detail in other chapters.

Since 1980/81 different schemes were implemented to enable untrained teachers to become pedagogically trained while remaining in their posts. To prevent the accumulation in schools of yet more untrained teachers, the universities

were encouraged, in patterns which vary from place to place and from subject to subject, to incorporate, or add on, the elements necessary for pedagogic training in a subject specialization. This happened in relation to geography and for the future, the majority of geography teachers will be fully 'professionalized' when they will start teaching.

Curriculum development

In the Report produced by an OECD team who visited Portugal in 1982 and reviewed the Portuguese education system as a whole, the method used to change the curriculum is explained. This, the team considered to be 'wholly inadequate'. 'A Working Party is established, made up chiefly of practising teachers together with a few administrators, inspectors and university specialists, expert in the discipline. These Working Parties have been a part-time addition to the normal work of their members. Sometimes the group has met intensively for a few weeks; more often, meetings are held during a whole or a part of the day, say, once a week, over a period of some months (a practice, incidentally, singularly disruptive of the teachers' prime commitment to their schools). Rapid changes in government since 'April 25' have been reflected in a bewildering succession of these Working Parties, each chiefly representative of the currently dominant political outlook. This sort of Working Party practice has something to recommend it as a reward to selected teachers, but as a means of serious curriculum development, it wholly lacks credibility'. (Examiners' Report - OECD 'Reviews of National Policies for Education: Portugal', 1984, p. 53).

In this thesis these aspects will be mentioned in relation to curriculum development in geography.

A new reform of the education system is being implemented. Working Parties members worked full-time, but problems already mentioned by the OECD team remained namely that of co-ordination between all the subjects studied at a particular stage. Insufficiency of human and material resources have also been serious obstacles for the implementation of the new reform.

In order to permit a full understanding of some chapters of this work, figures with the structure of the Portuguese Education System are included in Appendix A:

Figure A.1 - in 1960;

Figures A.2.1 and A.2.2 - the project of Minister of Education Veiga Simão (1971);

Figure A.3 - in 1979;

Figure A.4 - in 1987/88;

Figure A.5 - according to the 'Comprehensive Law on the Education System' - Law 46/86.

Table 2.5 (next page) shows the main structure of Portuguese Schooling before the 'Comprehensive Law on the Education System' and according to the same law, in order to permit a quick reference to facts mentioned during this work.

Table 2.5**Structure of Portuguese Schooling**

The main structure of schooling before the 'Comprehensive Law on the Education System' (Law 46/86)		
	i) Pre-school education	age 3 - 6
	ii) Primary education (compulsory)	four years from age 6, i. e. approximately age 6 - 10
	iii) Preparatory education (compulsory)	two years, i. e. approximately age 10 - 12
	iv) Secondary education (unified general course)	three years, i. e. approximately age 12 - 15
	v) Secondary education (complementary course and 12th year)	three years, i. e. approximately age 15 - 18
The main structure of schooling according to the 'Comprehensive Law on the Education System' (Law 46/86)		
	i) Pre-school	age 3 - 6
Basic education (compulsory)	ii) First cycle	four years from age 6, i. e. approximately age 6 - 10
	iii) Second cycle	two years, i. e. approximately age 10 - 12
	iv) Third cycle	three years, i. e. approximately age 12 - 15
	v) Secondary education	three years, i. e. approximately age 15 - 18

CHAPTER 3

Considerations on Curriculum Development in General

3.1 The curriculum

Many authors state that there is a problem about the meaning of curriculum.

Lawton (1983, p. 1) points out that 'a narrow definition of curriculum would limit it to *content* that is, subjects on the timetable and what is taught under of those subject headings. At the other extreme, curriculum is used in a very wide sense to include not only what is taught, but how it is taught and why. This would include curriculum evaluation, control and classroom interaction'.

Kelly (1982, p. 7) argues that it is convenient to distinguish the use of the word curriculum 'to denote the content of a particular subject or area of study from the use of it to refer to the total programme of an educational institution'. The same author (*idem*, p. 8) draws attention to the fact that some educationalists speak of the "hidden curriculum" 'by which they mean those things which pupils learn at school because of the way in which the work of the school is planned and organized but which are not in themselves overtly included in the planning or even in the consciousness of those responsible for the school arrangements'. He also points out (*idem*, p. 9) that sometimes a distinction is made between the official curriculum and the actual curriculum: by the first is meant 'what is laid down in syllabuses, prospectuses and so on', and by the second 'what is covered in the practice of the school'. Another distinction that is often drawn (*idem*, p. 9) is that between the "formal curriculum", the formal activities for which the timetable of the school allocates specific periods of teaching time and the "informal curriculum" including those activities that go on in the school, usually on a voluntary basis, after school hours (often called "extracurricular" activities).

For Stenhouse (1975, p. 4) 'A curriculum is an attempt to communicate the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice'. According to this author (*idem*, p. 5) it involves both content and method, and in its widest application takes into account the problem of implementation in the institutions of the educational system.

In this thesis the word curriculum will be employed in the sense of the

planned educational experiences inside the school system and it includes the definition of objectives, content and processes.

Curriculum development seen as a development process includes four main interdependent moments: the justification and orientation of the curriculum, curriculum planning, curriculum implementation and curriculum evaluation (Ribeiro, 1990).

The basis of the curriculum has three main sources: society, the individual and knowledge. As Lawton (1978, p. 2) points out, 'in curriculum there are at least three popular theories or sets of assumptions held by teachers, sometimes referred to as the child-centred view of education, the subject-centred or knowledge-centred view, and the society-centred view, i. e education justified in terms of the supposed views of society... However, none of these three "theories" can on its own be a complete justification for a curriculum' and in order to plan a programme of compulsory activities we will have to take into consideration the three kinds of view indicated above.

3.2 Curriculum planning

As Kelly (1982) points out, most curriculum change that occurred in the past was unplanned but now, although a good deal of curriculum change is still unplanned, there is an increasing incidence of planning and preparation in curriculum development.

Different authors produced curriculum models that are recommendations for designing the curriculum.

Tyler, in the so-called 'Tyler rationale' intended to show that there were four fundamental elements of a curriculum design: decisions about the educational purposes the school seeks to attain; experiences provided to attain these purposes; organization of these experiences; and assessment and evaluation to determine whether the purposes had been attained (Herrick and Tyler, 1950; Tyler, 1949). For Tyler, the purposes, the goals must be clearly formulated. Statements of goals need to indicate both the kind of behaviour to be developed in the pupil and the area of content in which the behaviour is to be applied. In the light of such goals the learning experiences are selected and after that these experiences are organized and finally evaluated in order to examine the extent to which the goals are attained in practice,

indicating in what respects the curriculum is effective or not.

Since the formulation of this 'rationale', many educationists such as Popham, Mager and Gronlund work on the first stage in order to provide clear goals to facilitate the learning and evaluation stages. This has led to an emphasis on behavioural objectives which specify observable pupil behaviours as a result of a course of instruction.

To help in the identification, description, classification and measurement of educational objectives taxonomies were produced in three broad areas or 'domains': the cognitive, the affective and the psychomotor. Among them the taxonomies in the cognitive domain of Bloom et al. (1956) and in the affective domain of Krathwohl et al. (1964), had an enormous influence on curriculum planning in many countries including Britain and Portugal.

Other educationists elaborated the Tyler model, such as Taba (1962) who worked mainly in the second and third stages and produced a number of teachers' guides for elementary school social studies¹, and in England the Wheeler (1967) model and Kerr (1968) work among others, show the influence of the Tyler model. Taylor (1970) for example, also developed what can be seen as a variant of the objectives model.

Rational planning models based on objectives have come in for considerable criticism. Taylor and Richards (1985) summarized these criticisms and said that these models have been attacked for taking a very restricted view of rationality: 'determining ends first, then determining means' is rational in some contexts, but not always in curriculum design; such models are abstractions, far removed from the complexities of the real planning situations and unable to do justice to their uniqueness (they fail to be sensitive both to the different kinds of subject matters and to the necessity for allowing flexible actions on the part of teachers); finally, objectives are treated as given; no adequate account is given of the source and origins of curriculum objectives in the beliefs, values and conceptions of those engaged in planning and of those influencing the planners.

The definition of pre-specified objectives and specially of behavioural objectives has been severely criticized by many authors. Among these criticisms the fact that only low level mental operations or the performance of certain skills can be previously specified; objectives do not take into account the nature of teaching where ends are constantly changing, nor the autonomy of teacher and pupil.

Stenhouse criticized them and stated that 'education as induction into knowledge is successful to the extent that it makes the behavioural outcomes of the students unpredictable' (Stenhouse, 1975, p. 82).

Eisner, in several papers criticized behavioural objectives (Eisner, 1967, 1969) and went on to distinguish two kind of objectives: instructional objectives and expressive objectives; only the last ones make possible creative responses: 'with an expressive objective what is desired is not homogeneity of response among students but diversity' (Eisner, 1969).

There are also some practical objections raised against behavioural objectives: teachers find it difficult to devise them (the task is also time consuming) and to teach with them always in mind; and there are also among other difficulties those concerning the possibility of giving an adequate evaluation.

Kelly (1982, p. 121) argues that 'the critics of the objectives model base their attack mainly on the fact that it treats education and knowledge as instrumental and, as a corollary of doing so, often adopts a passive model of man that is at the root of behavioural psychology,... in practice this leads to teaching that is better described as instruction or training or even indoctrination than education and that it places constraints on both teachers and pupils that inhibit that freedom of interaction that some have claimed to be central to the educative process'.

Nevertheless, authors such as Hirst (1975) argue that for curriculum planning to be rational, ends have to be clarified and although he agrees with many of the criticisms made about behavioural objectives, he argues that objectives in curriculum design do not have to be expressed in behavioural terms; ends can include concepts, forms of perception and judgement, patterns of aesthetic response and attitudes; some can be specific, some general, some behavioural, some not.

Skilbeck (1984, p. 230) states that 'what the critics of the objectives model do not show is either the inadequacy of the model in *any* form or the undesirability of its continued development and refinement as one of our most useful instruments of curriculum analysis and development. They fear its inhibiting effects, and this is perhaps salutary if surprising, but do not show why schools should not use it with discrimination and sensitivity as a typical mode of practical curriculum development'.

Stenhouse (1975) in order to give an 'orderly alternative' to the objectives model developed a 'process model'. The author suggests that education in schools

necessarily comprises at least four processes: induction into knowledge; initiation into social norms and values; training and instruction. He argues that the objectives model appears more suitable for both training and instruction in curricular areas which emphasize information and skills, but the process model is more appropriate for areas of the curriculum which centre on knowledge and understanding. Basically the author (*idem*, p. 85) argues that it is possible to design the curriculum rationally by specifying content and principles of procedure rather than by pre-specifying the anticipated outcomes in terms of objectives. 'Within knowledge and arts areas, it is possible to select content for a curriculum unit without reference to student behaviours or indeed to ends of any kind other than that of representing the form of knowledge in the curriculum. This is because a form of knowledge has structure, and it involves procedures, concepts and criteria. Content can be selected to exemplify the most important procedures, the key concepts and the areas and situations in which the criteria hold'.

Stenhouse has illustrated how such a model can be also used in an area of the curriculum which has no one specific form of knowledge as a framework. As the director of the Humanities Curriculum Project he states (*idem*, p. 93) that in its experimental design the project was an attempt to explore this problem. 'The content selected, controversial human issues, has in common with knowledge in the disciplines a necessary indeterminacy of student outcomes, but there is no disciplinary structure'.

The author also states that the process model raises problems for the assessment of student work, and implies that the teacher ought to be a critic, not a marker and (*idem*, p. 96-97) that any process model rests on teacher judgement rather than on teacher direction. It is more demanding on teachers and thus more difficult to implement in practice, but it offers a higher degree of personal and professional development.

Nevertheless, Hirst (1975) argues that the process model is still concerned with ends, though not behavioural in character, and that its emphasis on content and principles tends to obscure this necessary feature of curriculum planning.

Skilbeck (1984, p. 224) states that 'a careful reading of Stenhouse's discussion of curriculum planning and his description of the alternative, so-called "process model" suggests that his own position is not so far from some kind of objectives-based analysis. The language is different, and that is not without significance, but the tendency of thought is towards that projective, intentional,

action mode where conditions for learning are defined and steps taken to establish them - in short, towards the same general type of enterprise as objectives planning in the curriculum'.

This author developed another model called 'situational'. For him school-based curriculum development is the most effective way of promoting change at school level. The model has five distinct elements:

1. Analyse the situation - which involves an analysis within the school and of the wider environment to answer the question: "What are our curriculum problems and needs and how can we meet them?" (idem, p. 234);
2. Define objectives;
3. Design the teaching-learning programme;
4. Interpret and implement the programme;
5. Assess and evaluate (see Skilbeck, 1984, p. 230-240).

He states that 'this approach to school-based curriculum development accepts that well-constructed objectives are crucial for planning and designing the curriculum. They figure equally in evaluation and help structure teaching' (idem, p. 240).

As Taylor and Richards (1985, p. 71) points out 'Skilbeck's situational model is not an alternative to the other two (models): it is a more comprehensive framework which can encompass either the process model or the objective model depending on which aspects of the curriculum are being designed. It is flexible, adaptable and open to interpretation in the light of changing circumstances... It forces those involved in curriculum development to consider systematically their particular context, and it links their decisions to wider cultural and social considerations'.

Curriculum content

Curriculum content is an essential factor in curriculum planning. Arguments for the inclusion of particular subjects or particular kinds of content in the curriculum are different according to the educationists perspectives. The main ones concern epistemological theories on the nature of knowledge, views on the nature of society and culture; and ideas about the nature of children and ways in which a consideration

of this can be the central concern of curriculum planning (Kelly, 1982). Different arguments result from different conceptions of education.

For some authors knowledge is assumed to be objective, and education is to initiate the learner into this knowledge, others have the view that knowledge is subject to individual interpretation and is unique to each human being.

Hirst and Peters (1970) say that general education is concerned with the development of pupils' knowledge and understanding and the diversity of content should be determined by the diversity of logical 'forms of knowledge' and understanding. These authors distinguish seven forms of knowledge - formal logic and mathematics, the physical sciences, moral awareness and judgement, aesthetics, philosophy, religious experience and "our awareness of our own and other people's minds". None of these 'forms of knowledge' is reducible in character to any of the others, though inter-form connections do exist. With each 'form of knowledge' are associated concepts, a logical structure and truth criteria.

For Hirst, geography is not a 'form of knowledge' but what he calls a 'field of knowledge', because like other subjects, geography has no concepts of its own or characteristic truth criteria, it borrows concepts from the forms of knowledge and uses the appropriate tests for truth (see Graves, 1975, p. 68-71).

Phenix (1964) and other philosophers distinguish different 'realms' or categories of knowledge that are cited often in support of subject areas in curricula. For Phenix (1964, p. 5), *'general education is the process of engendering essential meanings'*. A philosophy of the curriculum requires a mapping of the realms of meaning, on which the various possibilities of significant experience are charted and the various domains of meaning are distinguished and correlated. Six fundamental patterns of meaning emerge from the analysis of the possible distinctive modes of human understanding. These six patterns may be designated respectively as '*symbolics*', '*empirics*', '*esthetics*', '*synnoetics*', '*ethics*', and '*synoptics*' (idem, p. 6).

The author places geography in '*empirics*' though he believes it has strong integrative tendencies (see Graves, 1975). '*Empirics*', 'includes the sciences of the physical world, of living things, and of man. These sciences provide factual descriptions, generalizations, and theoretical formulations and explanations which are based upon observation and experimentation in the world of matter, life, mind, and society. They express meanings as probable empirical truths framed in

accordance with certain rules of evidence and verification and making use of specified systems of analytic abstraction' (idem, p. 6). '*Synoptics*', refers to meanings that are comprehensively integrative. It includes history, religion and philosophy.

In contrast, other authors stress the undifferentiated nature of knowledge as experienced by the individual in everyday life, and consequently, distinction within knowledge (such as mentioned above) should not dominate curricula.

Bernstein (1967, 1971, 1977) suggests that there are two major types of curricula: a 'collection' type in which the subject boundaries are relatively fixed and strong and an 'integrated' type in which the boundaries are weak and according to him, there is a trend towards increased integration ².

These are only examples of the different views about knowledge and which can have an influence on curriculum content. Nevertheless, Kelly (1982) points out that due to the fact that there is not an accepted theory of knowledge, its main value to the curriculum planner is to illuminate and introduce some clarity into discussions on the curriculum.

Lawton (1983, p. 29) defends a common curriculum based on a selection from the culture of a society, suggesting the need to use a cultural analysis approach, i. e. 'of developing a method of matching the needs of individual children living in a specific society, by means of a carefully planned curriculum. This selection from the culture is made by analysing the kind of society that exists, and then "mapping out" the kind of knowledge and the kinds of experience that are most appropriate'. This process requires three kinds of classification: first cultural invariants, second cultural variables, third, a means of classifying the educationally desirable knowledge and experiences. The author suggests (idem, p. 38) that there are good anthropological and sociological reasons for subdividing the cultural system into eight structures or sub-systems and that 'a satisfactory educational programme must pass on the essentials of the eight systems'. The systems are: 1. social structure/social system; 2. economic system; 3. communication system; 4. rationality system; 5. technology system; 6. morality system; 7. belief system; 8. aesthetic system. Curriculum consists of a selection made by schools, for all students and from the eight areas indicated above.

Several objections were made to basing decisions about the content of the curriculum on an analysis of the nature of society. Among them, the recognition of the rapidity of social change and of the need for schools to go beyond initiating

pupils into the culture of the society and prepare them for social change itself, to adapt to and to initiate changes. Otherwise, to make choices among the cultures and subcultures of society implies a framework of values; consequently planners will be faced with the problem of making a choice as to the values within society he/she selects and how those values harmonize with the content, objectives or principles of subjects, in the process of curriculum planning.

Peters (1964, 1965, 1970, p. 144) argues that education 'involves the initiation of others into worth-while activities. The curriculum of a school or university may be operated with a principle of options, which encourages the individual to choose some activity which is suitable to his ability, aptitude and interest; but this choice is between a range of activities that are thought to be worth passing on'. This implies having the possibility of objectively identifying or determining what those intrinsically worth-while activities are.

Another problem linked with this is deciding on criteria to assess whether certain kinds of knowledge are more valuable than others. Kelly (1982, p. 48) points out that whoever takes decisions about the curriculum must be encouraged 'to appreciate the slender nature of the foundations on which any system of values or set of criteria he is using will be based. His choices should therefore be tentative and of such a kind as to avoid dogmatism. Furthermore, they should be open to continuous evaluation and modification since that is the essence of curriculum development'.

Another approach to knowing what should be taught is based on a child-centred ideology. The idea is that the main concern of education should be the needs of the child and that the curriculum content should be chosen with reference to the interests of the children. In relation to children 'needs' the main problem is that 'needs' is a value term. There are many differing views and opinions concerning what children need.

Other authors suggest basing education on a consideration of the interests of the child (this was one aspect of Dewey's philosophy of education). It has been suggested that teachers should plan their work to help children to pursue their interests and to organize their experiences in such a way that it gives them the possibility of deepening those interests and acquiring a clearer view of their intrinsic value. Again, there is the problem of identifying pupils interests, and for all children there will be areas of understanding they will miss if teaching is only based on the interests they already have. Teachers need to stimulate new interests.

Other authors suggest that the criteria for making a selection among both the interests and the needs of children should be found in the idea that the main function of education is to promote their continuous growth. There is also the problem of deciding how to guide children's growth.

For Dewey (1938, chap. 3) education is a continuous lifelong process and activities or experiences should be chosen likely to be most productive of further experience. This 'experiential continuum' should be the essence of education. Again there is the problem of the choice of experiences.

Kelly (1982, p. 59-60) suggests that curriculum planners and teachers, in making decisions about the content of the curriculum, should make them with reference to all of the criteria that the theorists offer us. Nevertheless, in reaching these decisions there is always a degree of subjectivity that implies that both should be informed and have a full knowledge and understanding of the issues involved.

The researcher agrees with Kelly's opinion, that it is necessary take into account the theorists findings and that it is impossible to reach an objective basis for decisions about curriculum.

Skilbeck (1984, p. 184), writing about the 'requirements for a core curriculum' points out what he means by relevance in education. For the author relevance in education is established first of all, by the material or task in question being related in some fashion to the basic structures of thought and action in culture and society. These are the sources of human development which provide the elements and the strategies of the curriculum. Secondly these relationships must be concretely experienced and appreciatively understood by the student... Thirdly, the relevance of learning has to be established by relating it explicitly to the purposes and aims of the curriculum. Fourthly, the relevance of the curriculum must be grasped and apprehended as a whole - it must seem to students, teachers and communities to be authentic, real, vivid, vital and living in both social and personal terms. These four aspects seem very important in making decisions about the curriculum.

3.3 Curriculum implementation

Once developed, a new or modified course must be implemented throughout the education system.

According to MacDonald and Walker (1976, p. 26) "diffusion" suggests 'a natural social process of proliferation' and "dissemination" 'planned pathways for the transmission of new educational ideas and practices from their point of production to all locations of potential implementation'.

Schon (1971) and Havelock (1971) identified three different models of dissemination. Schon's three models are: the centre-periphery model; the proliferation of centres model and the shifting centres model.

The centre-periphery model assumes that the innovation exists, fully realized in its essentials, prior to its diffusion; diffusion is the movement of an innovation from a centre out to its ultimate users; directed diffusion is a centrally managed process of dissemination, training, and the provision of resources and incentives. According to Schon the effectiveness of this model depends among other things, on the level of resources at the centre, the number of points at the periphery, the "infrastructure technology" (the level of technology governing the flow of men, materials, money and information), the energy required to gain a new adoption and the system's capacity for generating and managing feedback.

The proliferation of centres model 'This system retains the basic centre-periphery structure but differentiates primary and secondary centres. Secondary centres engage in the diffusion of innovations; primary centres support and manage secondary centres. The effect is to multiply many-fold the reach and efficiency of the diffusion system... The limits to the reach and effectiveness of the new system depend now on the primary centre's ability to generate, support and manage the new centres'. 'The central message includes not only the content of the innovation to be diffused, but a pre-established method for its diffusion. The primary centre now specializes in training, deployment, support, monitoring and management'.

The shifting-centres model according to Schon, has the following characteristics: it has no clearly established centre - centres appear, reach a peak, and disappear to be replaced by new centres within quite short periods of time; there is no stable, centrally established message, the message shifts and evolves, producing a family of related messages; the system of the movement cannot be described as centre-periphery, centres rise and fall, messages change. But the movement is a diffusing, learning system, in which both primary and secondary messages evolve rapidly, along with the organization of diffusion itself (see Schon, 1971; MacDonald and Walker, 1976; Stenhouse, 1975).

These models will be mentioned again when the models of curriculum dissemination employed for geography projects is considered.

Havelock's models are the following:

- a) The 'Research, Development and Diffusion' (R, D and D) model has many affinities with Schon's centre-periphery model. There is a developer who identifies the problem and a receiver who is essentially a passive recipient of the innovation. It is regarded as the model to be adopted when large-scale curriculum is the aim.
- b) The 'Social-Interaction' (SI) model is also a form of centre-periphery model and the needs of the receiver are determined by the central planner. But it recognizes that the social interaction between members of the adopting group are essential.
- c) The 'Problem-Solving' (PS) model - in this model the problem is identified by the consumer and the process of innovation is also initiated by him. There is an outside support agent who is also active and involved from the beginning. There is mutual collaboration between the support agent and the consumer. The whole process is personalized. According to Kelly (1982, p. 132) 'it might be fairly claimed that this is not a model of dissemination at all but rather that is, a model for school-based curriculum development'.

School-based curriculum development

According to Skilbeck (1982, p. 18-19) school-based curriculum development makes a number of claims:

- a) The curriculum should be made up of experiences of value, developed by the teacher and the learner together from an appraisal of the learner's needs and his characteristics as a learner.
- b) Freedom for teacher and for pupils is a necessary condition for the full educational potential of these experiences to be realized, freedom to allow the teacher to define objectives; set targets; select learning content; modulate the range and tempo of learning tasks; determine what is appropriate in the form of both criteria and techniques and assess the extent to which the

potential value of the learning situation has been realized.

- c) The school's responsiveness to its environment which involve exchange of ideas, resources and people through a network of communication systems, depends upon its freedom to build up its own curriculum in part as an exchange system with that environment.
- d) Curriculum development depends upon the development of quite substantial support systems.
- e) School-based curriculum development does not preclude curriculum development at other levels than the school, nor does it deny a creative role to others than teachers and pupils. One of the major tasks for policy makers is to help allocate types of curriculum decision to different agencies and interests from local to national level, and to design the necessary structures for sustaining curriculum development at all levels.
- f) Teachers, if suitable trained, can act effectively as curriculum developers, but part of the necessary support system for school-based curriculum development is an extensive in-service education programme.

3.4 Curriculum evaluation

Evaluation concerns the gathering of data in order to make decisions about the curriculum; assessment concerns the gathering of data about pupils' work. The two are linked and decisions about the curriculum should take into consideration pupils' assessment; curriculum changes can be influential in pupils' work.

There are different approaches and forms of curriculum evaluation. In Figure 3.1, Taylor and Richards (1985) made an attempt 'to map the scope of curriculum evaluation in terms of distinguishable but interrelated kinds of judgement, and to indicate the techniques of each and their focus of attention. In addition, an attempt is also made to list the proponents of each model or form of evaluation and to give some examples. 'The notion of judgement ties both styles of evaluation together. They are perhaps best thought of as opposite sides of the same coin, part of an organic unity rather than polar opposites. Their avowed ends are the same: the determination of the educational value to be placed on the curriculum' (idem, p. 139).

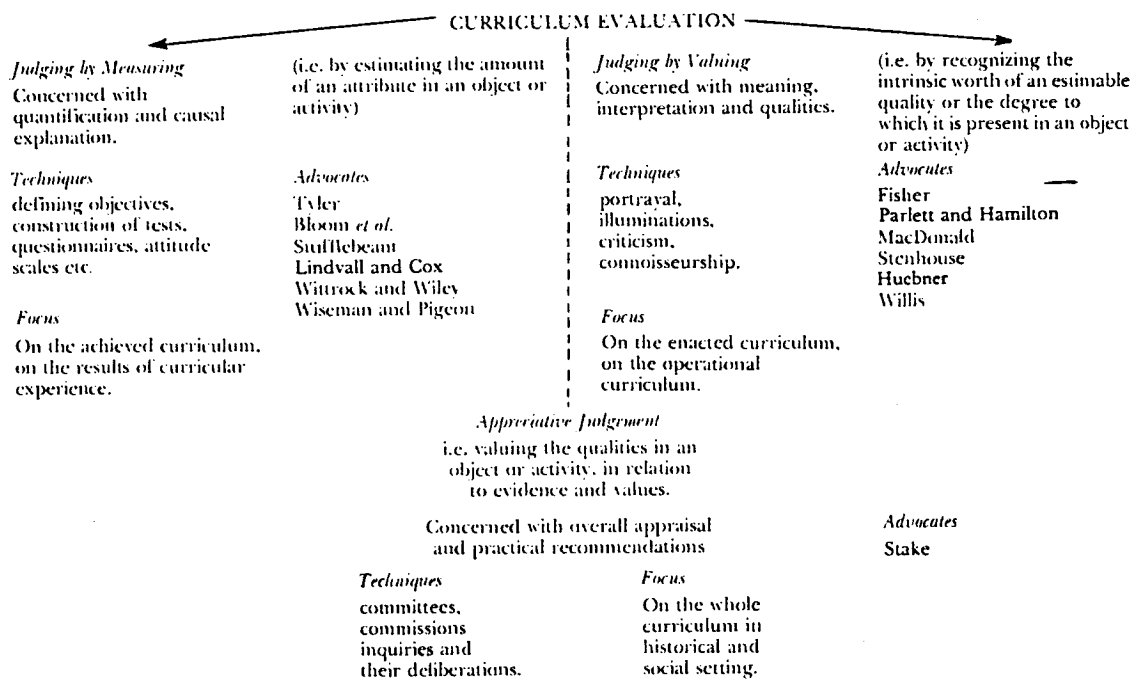


Figure 3.1
Diagram to represent approaches to curriculum evaluation.
(Taylor and Richards, 1985, 140)

The so-called 'scientific curriculum evaluation' was based on a definition of educational objectives, the intended outcomes of curricular experience, that afterwards should be defined in operational, and preferably behavioural terms. The extent to which the behaviours have been achieved has been accepted as a measure of the effectiveness of the curriculum. Measuring instruments were developed such as tests and attitude scales.

Many authors did not accept this approach, among them humanistic curriculum developers that besides other criticisms claimed that because much curriculum activity was open-ended and not geared to specific end-results, the behavioural objectives approach was concerned at most, with instruction rather than education (see for example Stenhouse, 1975). Consequently those authors developed other approaches to curriculum evaluation. They were more interested in qualitative aspects in description and interpretation than in measurement and prediction; they were more concerned with understanding rather than with explanation. Their aims were to describe learning processes and outcomes in relation to how participants judge the educational worthwhileness of curriculum experiences.

Among the forms of evaluation they use 'portrayal' evaluation is seen as an

attempt to offer a comprehensive portrayal of the programme which will view it as a whole and endeavour to reveal its total substance (Stake, 1972, 1975). 'Illuminative' evaluation is also concerned 'with description and interpretation rather than measurement and prediction' (Parlett and Hamilton, 1975, p. 88).

It is usual to make a distinction between 'in-course' and 'post-course' evaluation or between 'formative' and 'summative' evaluation: 'formative' evaluation usually takes the form of continuous in-course monitoring of both goals or principles and procedures, influencing the shaping of the curriculum through the successive revisions of the developmental phase; 'summative' evaluation is concerned with the appraisal of the emergent curriculum as it is offered to the school system (see Scriven, 1967).

MacDonald (1975, p. 133-134) in relation to curriculum control distinguishes three types of evaluation: 'bureaucratic' that is 'an unconditional service to those government agencies which have major control over the "allocation" of educational resources. The evaluator accepts the values of those who hold office, and offers information which will help to accomplish their policy objectives; 'autocratic' that is 'a conditional service to those government agencies which have major control over the allocation of educational resources. It offers external validation of policy in exchange for compliance with its recommendations'; finally 'democratic' evaluation, is defined as 'an information service to the community about the characteristics of an educational programme. It recognizes value pluralism and seeks to represent a range of interests in its issue formulation... The key concepts of democratic evaluation are 'confidentiality', 'negotiation' and 'accessibility'.

Another aspect that seems important to refer to in relation to evaluation, is that in school-based curriculum development there is an important role for the teacher in curriculum evaluation as much in any other aspect of curriculum development. Teacher's role in evaluation should include self-evaluation and peer-group evaluation. This does not imply that a proper evaluation requires the collaboration on an external evaluator who will appreciate many other aspects of the curriculum development process. In order to play a role in evaluation, teachers need to familiarize themselves with a range of skills and a number of evaluation techniques. This implies an in-service education programme, as was referred to above.

3.5 Influences and constraints on curriculum development

It also seems important to refer to influences and constraints on curriculum development.

Influences on curriculum development

History or tradition - its main influence is towards stability. Teachers have been trained to teach certain subjects and to use certain methods and they do not agree easily with changes that require them to learn new techniques or to lose the security of teaching a subject or using techniques in which they are confident of their knowledge and ability. For example many teachers are not enthusiastic about subject integration or using the computer in the classroom. Thus tradition can exercise a negative influence on curriculum development.

Economic changes exert pressures on curriculum, to change it in order that young people acquire the knowledge and skills needed to maintain and extend economic development; technological change results in changes: in the kinds of knowledge that students must acquire; in the need to give to future citizens the flexibility of mind to adapt to quick economic and technological changes that they will experience during their lives (this implies that emphasis should be given to the development of understanding rather than on acquisition of knowledge); and, finally, technological changes raise new moral problems, for example, those concerning conservation of the environment.

Economic needs and technological change lead to pressures for the introduction of certain kinds of subject into the curriculum, such as technological subjects, computer science, business studies and so on. Economic and technological changes lead to political and social changes. Economic and social changes lead to moral changes. These yield pressures to introduce interdisciplinary studies such as environmental and development education, education for international understanding, peace studies, and consumer affairs into the curriculum.

Political changes can originate changes in school organization and/or in the curriculum. In some countries governmental ideology is strongly reflected in the curriculum.

Educational ideologies such as classic humanism, progressivism,

reconstructionism have influenced curriculum change (see Chapter 5). Concern about social injustice, social inequality that results in the differentiated access to knowledge, can originate alterations in the curriculum, in learning activities. Moral issues can be included in the curriculum, pupil-centred approaches can be used, society-centred curricula introduced.

In countries like Portugal with a centralized system: the government, political parties, especially those with Members of Parliament; education officers working in the ME or in central agencies or experts belonging to committees in charge of planning the curriculum; inspectors; teachers (through trade unions or professional associations); parents (through associations); students (specially through unions); churches; industrial and business associations, all exert influence on the curriculum planning.

Influence on planning at school level is exerted by the staff, students, regional education officers, inspectors, publishers, parents, local interests.

Universities and other higher education institutions can exert a double influence: directly, through advice given in relation to curriculum innovation projects; indirectly through scientific and training courses they offer to teachers (in initial and in-service courses); and through entry requirements for admission to higher education courses (including control over examinations).

Constraints on curriculum development

In countries with centralized education systems, the insufficiency of central resources, including finances, personnel and a poor administrative organization at central and regional levels are serious obstacles for curriculum development

At school level the most serious constraints are insufficiency of resources (finance, equipment), buildings not adapted to curriculum innovations; poor internal school administration and organization; teachers without adequate scientific and training qualifications; insufficiency and/or inadequacy of in-service opportunities; staff, parents and students attitudes not favourable to curriculum changes.

Another constraint is a non effective articulation and communication between central, regional and school levels.

And finally, the insufficiency of research in education by professional researchers, higher education staff and teachers (action research) is also a constraint for curriculum development.

3.6 Curriculum control

Finally, some aspects concerning the adoption of a national curriculum and the control of the curriculum will be mentioned.

Different ideological positions on education are reflected for example, in different opinions about the adoption or not of a national curriculum (see Lawton, 1988). Those against a national curriculum are in favour of as much diversity as possible both among schools and within schools to offer to students choices according to aptitude, future educational aspirations and occupations; according to (supposed or not) different intellectual abilities or even according to different interests.

In the DES (1987, p. 1) document 'Education Reform - The Government's Proposals for Schools' reasons why the Government of the UK is introducing a National Curriculum are indicated. 'Despite the good performance of some schools, too many pupils are still achieving less than they could and less than they should, compared with children in other leading European countries. The overall picture is one of disappointingly low standards of achievement. Teachers' expectations of what their pupils can achieve are frequently low. Today's school curriculum can often be narrow and unbalanced. For example, too many boys give up modern languages before they are 16. Too many girls drop physical sciences. A national curriculum guarantees that all pupils will receive an education which is broad, balanced, relevant to their needs and set in a clear moral framework. It prepares them better for adult responsibilities and work. At the same time, by setting clear targets and monitoring progress, it aims to raise the standards achieved by pupils and schools' ³.

In relation to the USA, Tanner and Tanner (1980) quote Caswell. In the early 60's this author stated that with the 'rise of centralized control of the curriculum in our schools... local initiative would tend to decrease'. Caswell discussed the arguments surrounding the issue of curriculum centralization. These arguments were: local schools are largely unaware of national purposes and needs; in an

increasingly mobile society, students must be able to transfer from school to school and state to state without the stumbling block of wide variations in the curriculum; and local systems do not have at their command the competence needed to deal effectively with curriculum problems. The author (n.d.) found the arguments supporting curriculum centralization untenable. The weight of sociological evidence was that there was too much conformity in school and society rather than too little. 'Individuality, creative imagination, and special aptitudes are frequently smothered under uniform treatment of all pupils'.

The arguments for a centralized curriculum prevailed, but in the Ford Foundation Annual Report for 1973, it stated: 'the people who are expected to put new programs into operation should participate in defining problems and developing solutions, and that to do so often requires re-training' (Tanner and Tanner stated that the Ford Foundation 'almost single-handedly shaped the managerial-efficiency policy in education in the 50's and 60's') (p. 633-634).

Caswell (n.d.) argued that, very clearly improving the curriculum depended on better professional preparation for teachers and skilled supervision to help teachers become ever more knowledgeable and responsible decision makers.

This problem of centralization or decentralization will be discussed by looking into curriculum development in Portugal. This country has a national education system and a centralized curriculum.

In the following chapter considerations on curriculum development in geography will be considered.

CHAPTER 4

Curriculum Development in Geography

4.1 Geography in the curriculum

The first question concerns the justification for the inclusion of geography in the curriculum.

It has already been pointed out that Hirst considered geography as a 'field of knowledge' and not a 'form of knowledge'. Phenix (1964) distinguished different 'realms' or categories of knowledge, he included geography in 'empirics' though he believed it has strong integrative tendencies.

Graves (1975) quoted two other authors King and Brownell (1966) who considered that knowledge consists of several 'disciplines of knowledge'. For these authors a discipline is a community of scholars, it has what Schwab has called a 'syntactical' structure (modes of enquiry though not unique to it), and a 'substantive' structure (the interlocking concepts and principles which form part of the language of the discipline); has a heritage of literature and a communication network; and finally has an emotive appeal to its adherents. Geography has all these aspects and consequently can be considered as a 'discipline of knowledge' (see Graves, *op. cit.*, p. 75-76).

Lawton (1983) defends a common curriculum based on a selection from the culture of a society. Graves (1985, p. 19-20) did an analysis of Lawton's work and says that 'the place given to geography... is limited to contributing to social and economic education in conjunction with history, politics, economics and sociology. Apparently, geography cannot contribute to the rationality system, to communication through graphicacy, to technology and so on. My own view is that though cultural analysis is a possible approach to curriculum planning, the attempt to fit subjects to the cultural system is the wrong approach; it would seem to me better to argue from the subject to its contribution to the cultural system. Thus geography can not only contribute to social, economic and political education through its concern with spatial arrangements in the economic and social system, but it can contribute to communications specifically through the use of maps and other graphics; it can contribute to rationality through its earth science (and social science) aspect; it can contribute to an appreciation of the influences of technology on landscapes and spatial arrangements and involve pupils in information technology; it may be used to develop moral education by considering aid to the Third World; it involves values

education in so far as any decision concerning the location of a factory (housing estate or plantation) implies certain values position; and it involves aesthetic education to the extent that place plays as much a part in geography as space, and that developing a sense of place also involves making aesthetic judgements about such places'.

According to a child-centred approach a curriculum would be concerned not with subjects, but with experiences, topics chosen by the pupils and 'discovery'. According to Walford (1981 b, p. 219) 'an important geographical contribution to this kind of tradition would be exploration of personal feelings and images about the world, and the orientation of the student in his own personal neighbourhood and regional environment'.

These may be seen as examples of arguments for the inclusion of geography in the curriculum according to different educational perspectives.

4.2 Curriculum planning in geography

Graves (1979, p. 3) described the traditional process of curriculum planning in geography during the nineteenth century and the first half of the twentieth century, which was similar to the Portuguese one. 'First, a decision was taken by the headmaster or by an official or a Committee that geography was worth including in the school curriculum'. This decision was taken in Portugal by the Minister in charge of Education.

'Secondly, the teacher in charge of geography (or a suitable official body where the education system is centralized) drew up a syllabus'. A syllabus was essentially a list of content deemed appropriate for the students and derived from the totality of what the subject had to offer'. In Portugal syllabuses were drawn up by a Committee designed for this purpose and these were adopted at a national level. Syllabuses were essentially lists of content too. Sometimes syllabuses included 'instructions' addressed to geography teachers, whose purpose was to give some advice on how to teach the subject at different levels.

In Portugal as in Great Britain, the teacher in charge of teaching one class would draw up 'lesson plans' which would indicate how he/she intended to teach the content outlined in the syllabus. The 'lesson plans' could include the 'objective' of the lesson, the methods and resources which would be used.

It is included in the Appendix B (p. 379-384) a 'lesson plan' published in 1971 in the official bulletin for the grammar schools (Maya, 1971 a). This lesson concerned the study of North Africa and besides the list of content, included the 'objective' of the lesson, methods and teaching aids. The teaching method which was advised was essentially the 'socratic' one and pupils would give short talks; teaching aids included maps, graphs, photos, slides, sketches. Pupil assessment was not mentioned in the 'lesson plan'.

Graves (idem, p. 8) says that in Great Britain the teacher could read advice on how best to structure his lessons in the literature on teaching methods and could also find out about visual and other teaching aids. In Portugal it was more difficult to find literature on geography teaching and the author of the 'lesson plan' quoted above (she was then the person in charge of geographical education in the Directorate General for Grammar Schools Education ('Direcção-Geral do Ensino Liceal'), included in her article a short bibliography on 'general didactics' and 'didactics of geography'. None of the books was Portuguese. They were all written in French or in Spanish. Among them the author refers to the French edition (1966) of the first UNESCO Source Book for Geography Teaching. At the time, besides the UNESCO book, probably the most influential books were a Spanish book by Pedro Plans 'Orientaciones sobre Didáctica de la Geografía' that was translated into Portuguese in 1969 and the French book 'La géographie à l'École' from Debessé-Arviset (1969) ^{1, 2}. Teachers could also find books on the use of visual and other teaching aids (not specific for geography classes).

Finally, in Great Britain (Graves, idem p. 8) the teacher would evaluate student learning by giving class tests and by school and public examinations. In Portugal student learning was essentially assessed by written and oral tests and by public examinations (also with written and oral tests).

Graves (idem, p. 8) says that the concept of feedback was accepted but generally limited to that affecting methods and not so much to content or to objectives. The same happened in Portugal but due to pupils' learning problems and to influences specially from France, syllabus content was altered and simplified several times (see Chapter 5).

The same author says (idem, p. 9) that evidence is strong that right up to the late 60's, much curriculum planning in geography was based on a regional syllabus framework and this was associated with what was then the commonly accepted research paradigm in geography, namely the 'areal differentiation' or 'regional

synthesis' paradigm. The same happened again in Portugal but this kind of curriculum planning was maintained until the middle 70's. Nevertheless in Portugal as well as in France it was prescribed that the study of geography at secondary school level would start with mathematical geography and with elementary notions of systematic geography to give the possibility of applying the learned concepts to the study of the continents and of Portugal and its Overseas Territories. Systematic geography was studied again but more in depth in the first of the two last years of secondary education, before studying again in greater depth human and economic aspects of Portugal and its Overseas Territories and the Great Powers of the World. Consequently, importance was given to systematic and regional geography (which consisted essentially of a description of the continents, their main regions and countries).

In Portugal on an academic level, the influence of the so-called 'new geography' started in the 70's. The first doctoral thesis based on the 'new paradigm' was presented at the beginning of the 70's (Gaspar, 1972). At school level the influence of new geography started at the beginning of the 80's, but since the middle 70's, the regional framework has been questioned. In Portugal as well, as Graves (idem, p. 9) pointed out in relation to Great Britain, there appeared to be a disjunction between what schools were doing and what professional geographers were doing; in order to articulate academic and school geography, especially since 1977/78, some committees in charge of elaborating new syllabuses, specially for the three last years of secondary education, included one or two university teachers.

However the most important influence on curriculum planning in Portugal at the end of the 70's and beginning of the 80's was the result of the diffusion of the objectives approach to curriculum planning. Teachers in charge of designing the geography curriculum included in each syllabus the definition of general objectives, the topics and lists of operational objectives.

Also evident was the wish to produce a curriculum not based on a traditional regional syllabus framework. But syllabuses constructed at the end of the 70's and beginning of the 80's show evidence that a regional structure was still present. For example the 9th year of schooling syllabus (sent to schools in July 1983) included the study of world population, the great contrasts of agriculture in the World: in Europe - in Mediterranean Europe, in Western and Eastern Europe; in America - in Anglo-Saxon America and in Latin America; in Africa; in Asia. The same organization is proposed for the study of industry and cities. For the 7th year of

schooling since the school year 1978/79 the study of systematic general geography is prescribed. These syllabuses are still in force today.

Nevertheless other syllabuses specially those prescribed for the 10th, 11th ('study areas' C and D) and 12th years of schooling show a concern for studying the spatial organization of different economic activities.

Until the present reform no reference was made to curriculum planning or curriculum theory.

Another influence on curriculum planning specially at basic education level was the child-centred approach. At secondary level this influence was more evident not at the general planning level but at the instructional planning level.

The increasing concern of geographers for environmental and development problems at different scales (from local to global) led to a growing importance being given to the definition of objectives in the affective domain. Geography should contribute to pupils moral development, to the development of their attitudes and values specially concerning issues which reflect on spatial organization.

A new curriculum, new syllabuses are on trial now in some basic and secondary education schools. In geography curriculum planning emphasis was placed on the learning of concepts, progressively more difficult, as well as on the development of attitudes and values, on the practice of skills and on the utilization of 'research' techniques.

Curriculum planning models in geography

Reference has already been made to different curriculum planning models: the 'objectives model', the 'process model' and the 'situational model'.

Graves (1979, p. 38-39) analysed the first two and said that 'these models refer to a dynamic rather than a static curriculum' and that 'the differences between them are ones of emphasis rather than of substance, and that the emphasis put on objectives may best suit one situation and the emphasis on procedures may best suit another. Both seem to have relevance in geography since they have both been used by different curriculum development teams. My natural inclination would be to combine them into an eclectic objectives and process model of curriculum planning at the instructional level. But a model for the general planning level is also required'.

Biddle (1976 a, 1982, p. 276) developed 'a curriculum process system which combines the major features of a number of cyclic models and incorporates most of the refinements suggested by research'. The author says that this model (Figure 4.1) provides a framework for formulating a curriculum document and can be used to identify the questions concerning the formulation of geography curricula.

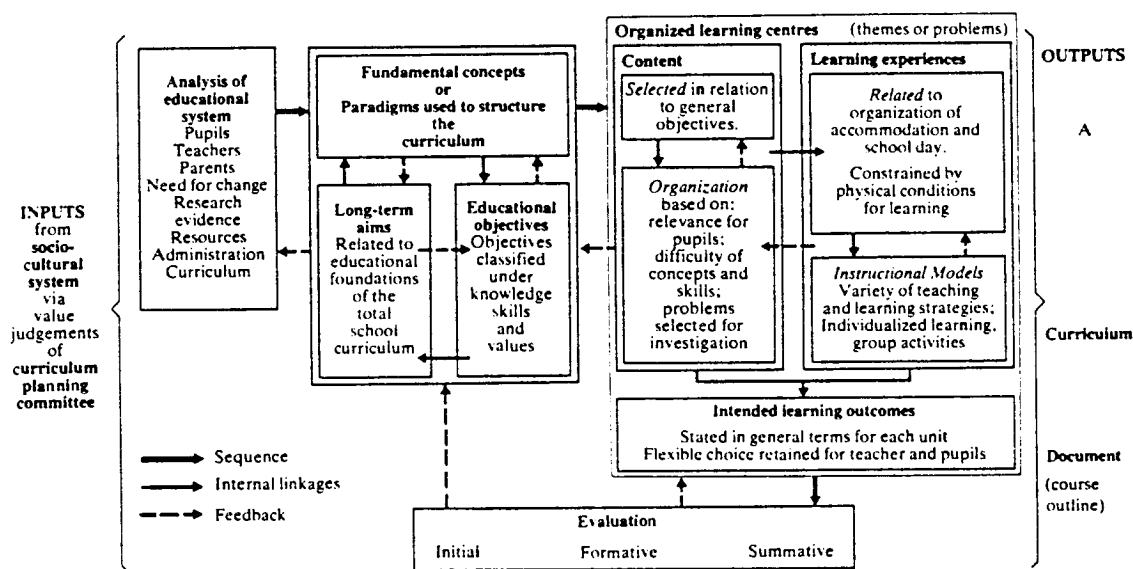


Figure 4.1
A curriculum process system.
(Biddle, 1982, 280)

Graves (1979) suggested models for planning the geography curriculum at two levels: the general level and the instructional level (Figures 4.2 and 4.3). The author (idem, p. 42) says that the general planning model 'is an instrument for choosing content and specific objectives for the instructional level, based on criteria which are on a high level of generality'. This model is a 'combination of an objectives and process model in that it begins by assuming certain overall educational aims and then looks at the process of translating these into a school course, which itself is influenced by such factors as examination and what is known about the psychological development of students and the sociology of education'. The instructional planning level is concerned with planning for medium and short terms.

Biddle and Graves models are useful in that they provide a structured procedure to follow in curriculum planning.

To analyse the different components of curriculum planning in geography, the order of components presented by Graves in the models he developed will be followed (Graves, 1979).

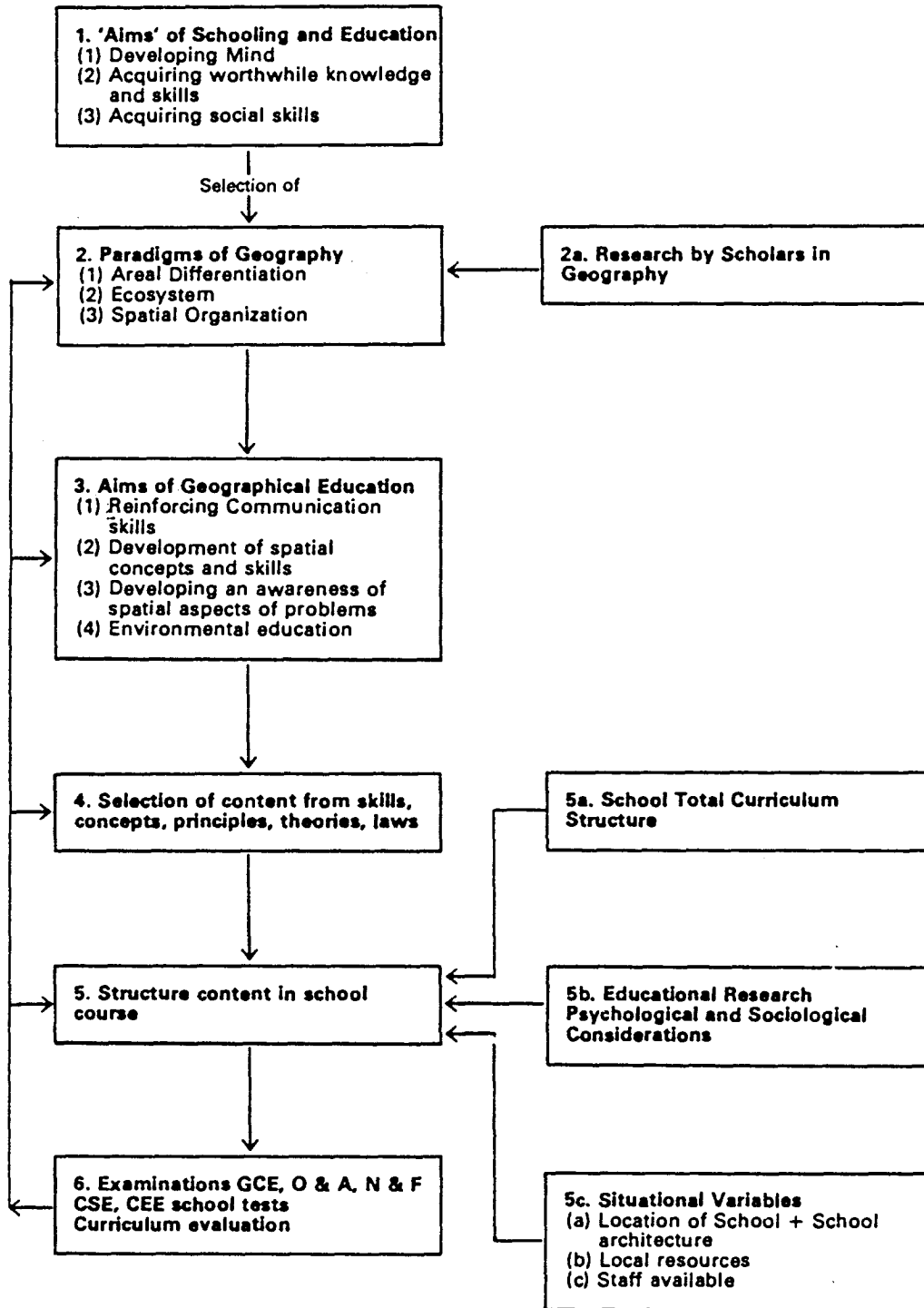


Figure 4.2

Model for curriculum planning in geography at the general level.

(Graves, 1979, 43)

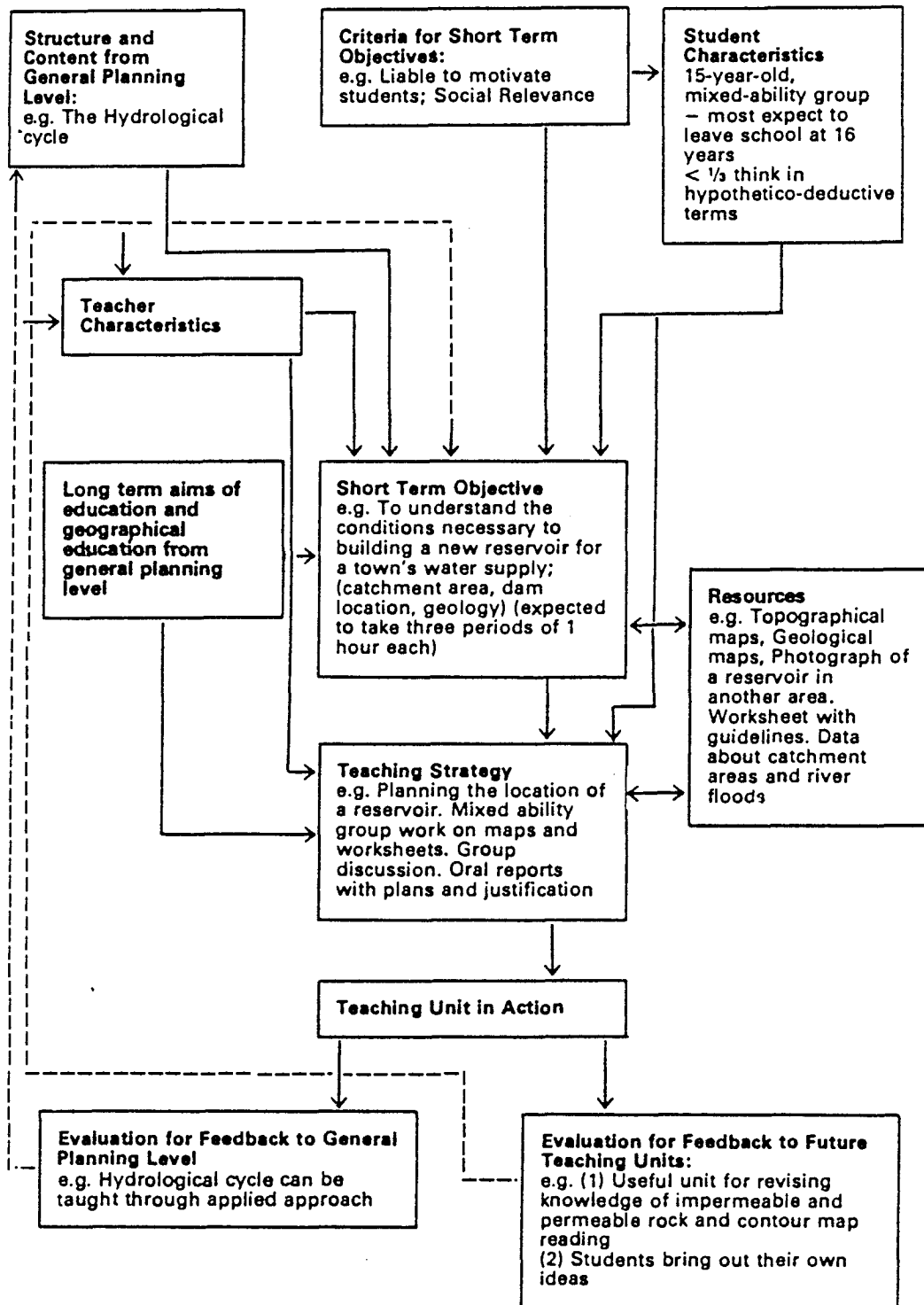


Figure 4.3
Model for curriculum planning in geography at the instructional level.
 (Graves, 1979, 51)

The General Planning Level

Aims of Schooling and Education

Different statements about the contribution of geography for child education have been made.

In Appendix B (p. 385-392) are included: 'a classification of objectives that have been made, stated as appropriate for geography in secondary schools' (Bennetts, 1973, p. 166); 'Geography in the School Curriculum 5-16' (Geographical Association, 1981) and 'Geography for ages 5 to 16' (DES, 1990).

According to these statements geography is deemed to have the potential to give children:

- world knowledge
- environmental awareness
- graphicacy skills

Geography explores the relationship between the Earth and its peoples through the study of place, space and environment, at different scales local, regional, national and global. Using a wide range of skills, geography identifies, analyses and helps to clarify contemporary problems concerning peoples and their environments. Place, space and environment create a bridge between the humanities and the physical sciences (DES, 1990, p. 6).

Geography is also deemed to have the potential for helping pupils to develop:

- general mental abilities
- moral judgement
- social skills
- international understanding
- literacy and numeracy

Geography has many links with other subjects and consequently: knowledge, skills and attitudes learned by pupils in geography can contribute to pupils' understanding of other subjects in the school curriculum.

Geography can also contribute strongly to cross-curricular themes, skills and dimensions such as:

- environmental education
- economic and industrial understanding
- careers education
- citizenship
- development education
- peace studies
- multi-cultural education

Aims of Schooling and Education are defined in Portugal, in the 'Comprehensive Law on the Education System' ('Lei de Bases do Sistema Educativo')³. In this law are stated the objectives of the different education levels: 'pre-school education' (from age 3); 'basic education' (compulsory, 9 years, from ages 6 to 15), secondary education (3 years) and higher education. In Appendix B (p. 393-396) are presented the articles 5 to 10 of this law concerning the objectives and organization of the pre-school, basic and secondary education. It is obvious when analysing these objectives that geography can make an effective contribution to children attaining some of these objectives and even it seems indispensable to children attaining others. Some examples will be given.

Geography seems indispensable:

- At pre-school level:

'To encourage observation and understanding of natural and human surroundings so that the child can integrate and participate more successfully' (objective c);

- At basic education level:

'To develop national awareness open to realities in a context of universalist humanism and international solidarity and cooperation' (objective f);

'To develop understanding and appreciation of the values of Portuguese identity, language, history and culture' (objective g);

'To provide pupils with experience furthering their civic and socio-affective maturity, instilling positive attitudes and habits of relating and co-operating, both regarding family connections and a conscious and responsible involvement in their surroundings' (objective h);

'To further the acquisition of independent attitudes so as to develop citizens who are civically responsible and participate democratically in community life' (objective i);

- At secondary education level:

'On the basis of the realities of regional and national life and appreciation for the permanent values of society in general and Portuguese culture in particular, to educate young people interested in solving the country's problems and aware of the problems of the international community' (objective d).

Only in geography can pupils acquire a knowledge and understanding of certain physical and human features of the Earth at different scales (from the local to the global); an awareness of issues originating in human activities in the environment; and of the social, economic, political and cultural consequences of the interrelationship between man and environment. The understanding of the features and the awareness of these issues and consequences will contribute to developing attitudes of solidarity and co-operation at local, regional, national and international levels.

Geography also has the potential to help children to attain many of the other objectives at the three education levels.

Paradigms of Geography

Graves (1979, p. 42-44) says that 'in order to fulfil these general aims, it is necessary to select one or more appropriate paradigm(s) of geography'. According to Biddle (1976 b, p. 403) 'paradigms used in geographical research provide a more rational basis on which to make decisions about geography curricula than the use of systematic topics, regions, case studies, or organizing concepts based on a single structure of geography'.

This author explains that, during the 60's, there was a move away from regional based courses for many reasons, among them the criticism by research workers of exceptionalist views stressed in regional geography syllabuses which were no longer supported by philosophers and methodologists in geography; the emphasis on description and the learning of factual content about numerous

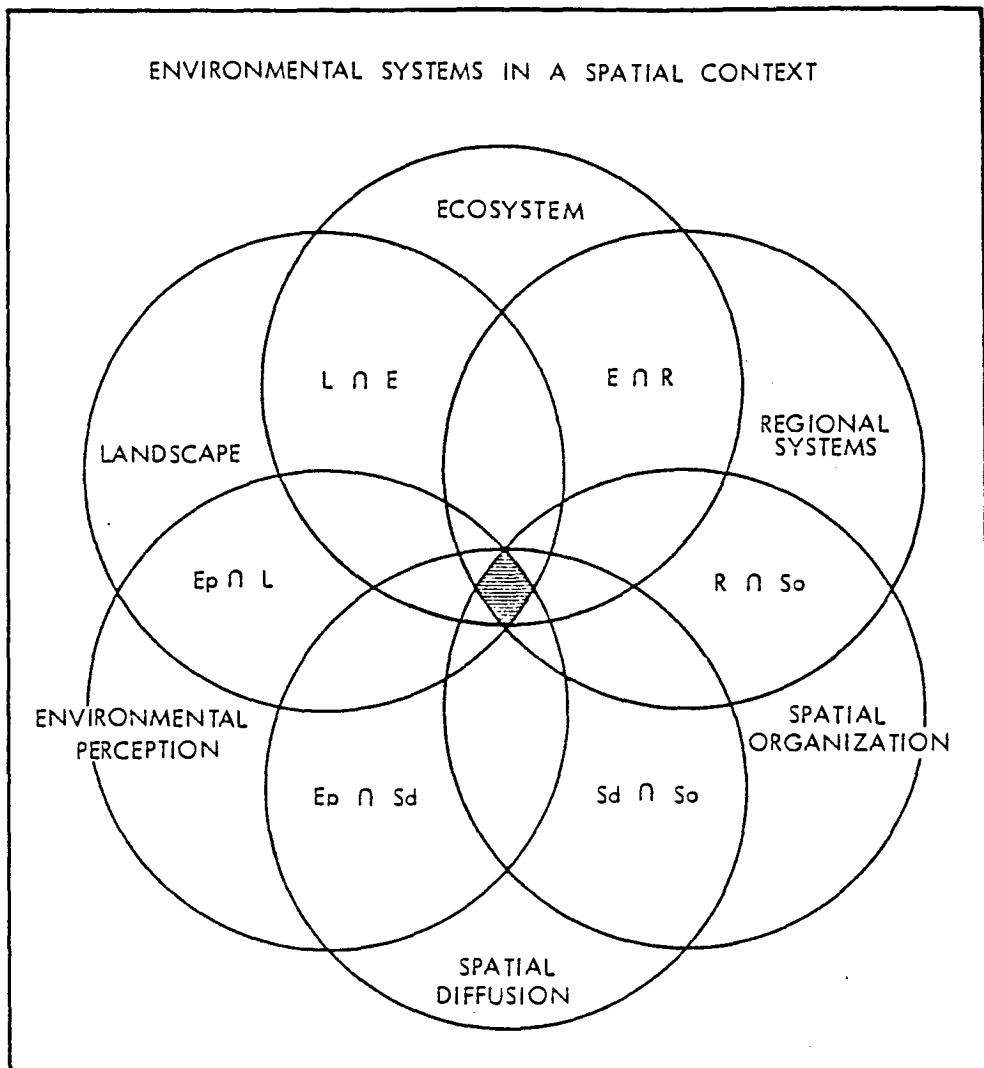
regions of the world, which became uninteresting for the majority of students and teachers; Bruner's statements on curriculum design in which he emphasized the importance of identifying the underlying principles that gave structure to a discipline; and the publication of studies in concept learning by Piaget, Ausubel and Gagné ⁴.

In relation to concept-based courses, Biddle says that many geographical educationists who favour this kind of course, have accepted the assumption that there is only one structure of geography and they have concentrated on identifying the fundamental concepts which are interrelated within the structure. But according to Biddle the analysis of the best geographical journals shows that there is not one single structure acceptable to all research workers in geography. The use of one single structure of geography in secondary school could invite criticism, because the identification of one structure for geography is a reductionist approach which hides the diversity of interests of research workers and could therefore, eliminate a number of interesting approaches to geography curricula organization. Consequently, geographical educationalists have preferred to use research paradigms.

Biddle used the term paradigm as 'the structure of philosophical and methodological beliefs which guide research workers in the selection and solution of problems, and in the evaluation and critical analysis of the solutions to these problems. It therefore incorporates both a substantive and a syntactical structure' (1976 b, p. 405). 'The selection of a paradigm by a research worker focuses his attention on certain kinds of problems which emanate from a particular image of the World and a particular interpretation of perceptual experience' (Biddle, 1976 b, p. 405).

Figure 4.4 represents a diagram of the intersecting paradigms in geography (Biddle, 1976 b, p. 407). It is a Venn diagram in which the square represents the discipline of geography defined as the study of environmental systems in a spatial context, and the circles represent a variety of overlapping paradigms, which provide structures for identifying and solving spatial questions. These paradigms are: landscape, ecosystem, environmental perception, spatial organization, spatial diffusion, and regional systems (Biddle, 1976 b, p. 406), and have been suggested as appropriate for providing cohesion in geography curricula (Biddle, 1976 b, p. 409).

According to Biddle 'an investigation of research publications using these paradigms, or a combination of them, provides information for constructing



One approach to the representation of the interrelationships among the major paradigms employed by research workers in geography is to use a Venn diagram and to regard the paradigms as six intersecting sets within an environmental systems set. That is, the complement to the E (ecosystem) set would be R (regional systems), So (spatial organization), Sd (spatial diffusion), Ep (environmental perception), L (landscape), and the intersecting sets, within the overarching Es (environmental systems) set.

Figure 4.4
Intersecting Paradigms in Geography.
(Biddle, 1976 b, 407)

Graves (1979, p. 44) for schools preferred (then) the ecosystem paradigm since it provides for a smoother transition from the old 'regional synthesis' or 'areal differentiation' paradigm; because man-land or environmental problems are still a major concern for geographers; and the spatial organization paradigm tends at the secondary school level to leave out pure earth-science problems from its sphere of interest.

The author of this work agrees with Graves and Biddle in using research paradigms as structures for geography curricula planning.

According to Biddle (1976 b, p. 415) the advantages of using a paradigm, or combination of paradigms are: that it introduces students to the substantive and syntactical structures in the discipline which are favoured by research workers when identifying and solving various types of spatial problems; it provides coherence for the curriculum; it indicates to students new ways of looking at their environment; it assists students in developing concepts and skills which enable the identification and development of useful hypotheses about present and future problems relevant to them; it should assist students in grades 7 to 12 to develop an increasing interest in the discipline; and it helps in preventing a gap between geography in secondary school curricula and geographical research.

In Portugal if research paradigms were adopted as structures for geography curricula, the author of this work thinks that at basic education level (years 7 to 9) the most appropriate paradigm would be the ecosystem one, for the reasons indicated by Graves (see p. 61) and because this paradigm permits the integration of physical and human geography within a systems framework. At secondary education level (years 10 to 12) geography is not compulsory and students should be acquainted with other paradigms and new approaches in geography: humanistic, radical, welfare, hermeneutic. For example the use of the 'spatial organization paradigm' as a structure for some teaching units could be favourable because it assists in connecting secondary school geography with higher education geography and it facilitates the 'combination' with other social sciences, namely economics.

As Biddle (1976 b, p. 415) points out, this approach to curriculum development is a flexible one in which teachers may choose to use different paradigms to formulate curricula for one or more years or to develop courses for shorter periods, or they may even combine two or more of the paradigms to provide the structure for disciplinary, multi-disciplinary or inter-disciplinary courses.

Aims of Geographical Education

Aims of geographical education must be aligned with the aims of schooling and education. Geography as any other curriculum subject should contribute to the personal development of pupils and prepare them for adult life, promoting the acquisition of knowledge and the development of skills, attitudes and values.

In the DES document 'Geography for ages 5 to 16' (1990, p. 6) it is stated that geography explores the relationship between the Earth and its peoples through the study of place, space and environment. Consequently the study of geography aims to lead pupils to: acquire knowledge and understanding about these three elements: place, space and environment; develops attitudes and values about the consequences of human activities on the Earth's surface; develops skills and competencies (for instance enquiry skills, communication skills, social skills) (see Aims of Schooling and Education, p. 57).

Selection of content from skills, concepts, principles, theories, laws

'The paradigm selected by the teacher provides the guidelines for translating aims into educational objectives under the categories of knowledge, skills and values, and from these objectives instructional units can be organized' (Biddle, 1982, p. 289). Biddle (1976 b, 1982) gives examples of the kinds of educational objectives which may be achieved through using different paradigms as the basis for conceptual models to provide a structure for a curriculum. Figure 4.5 represents a conceptual model for curriculum development based on the ecosystem paradigm and Figure 4.6 represents a conceptual model for curriculum development based on the spatial organization paradigm.

Graves (1979, p. 56) says that the selection of content with which the teacher can attempt to reach both his short and long term objectives is a difficult task which involves the 'problem of selecting the concepts, principles and skills which are worth teaching (the content proper) and the kinds of examples which may be used to illustrate them (the context)'.

It seems obvious that the problem of selecting the concepts, principles and skills which are worth teaching, as well the context, involves the problem of deciding what is worth teaching and there is always a degree of subjectivity even when the planner takes into account different criteria.

Besides this many sociologists claim that all knowledge is socially constructed and consequently there are no objective criteria for the choice of the curriculum content (Young, 1971 a).

Marsden (1976 a, 1976 b) says that the curriculum planner needs to take into account a number of variables in his structuring of course units. Among these

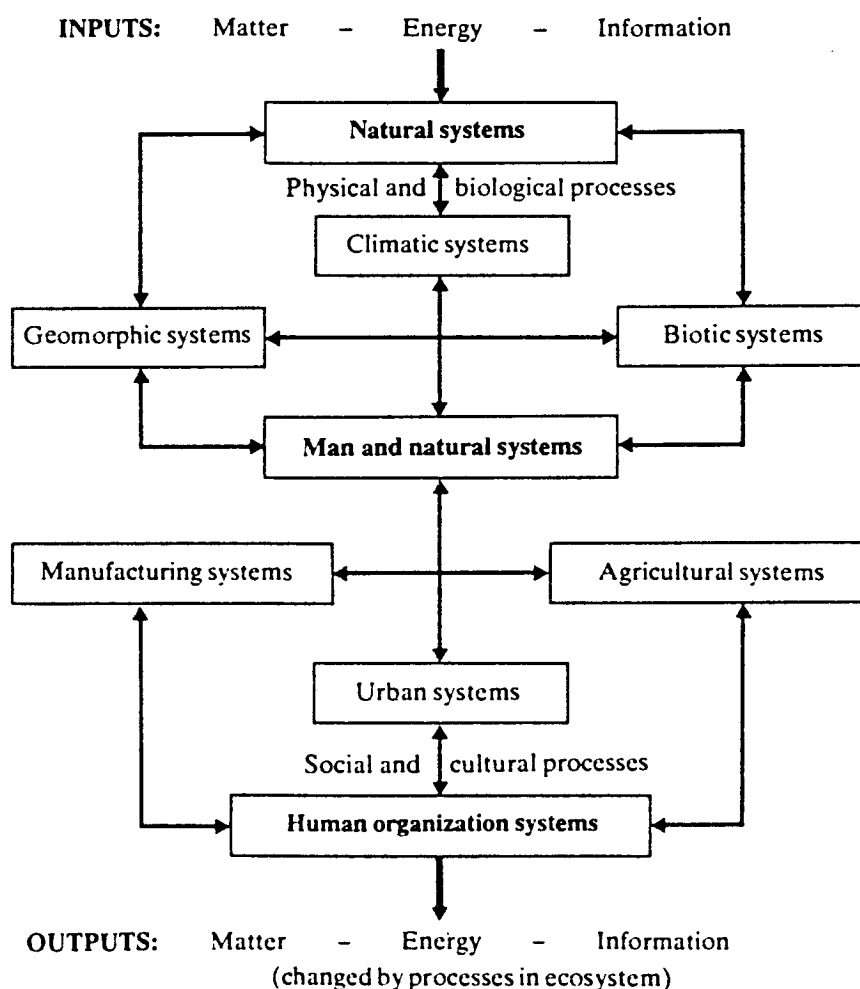


Figure 4.5

*A conceptual model for curriculum development based on the ecosystem paradigm.
(Emphasis is on process, on the flows of energy, information, matter and on feedback mechanisms).
(Biddle, 1982, 290)*

variables principles, concepts and exemplars are the basic elements in the structure of a discipline. Principles, concepts and exemplars have distinctive but interacting roles to play in structuring curriculum units; all can furnish educational objectives but principles and concepts represent the higher levels of generality. Principles provide a check-list of worthwhile objectives which help select significant content; concepts can be used for more detailed structuring, to ensure that a basis for meaningful learning is laid; exemplars should be presented not only as verbal data, but also in photographic, cartographic, diagrammatic, tabular and numerical forms.

According to the author in curriculum planning it is also important to consider other factors such as the need to foster a higher level of understanding, the same

time ensuring that learning is seen as a means to wider ends; pragmatic aspects such as teaching resources, the interests of teachers and pupils can act as an ultimate criteria of choice of content.

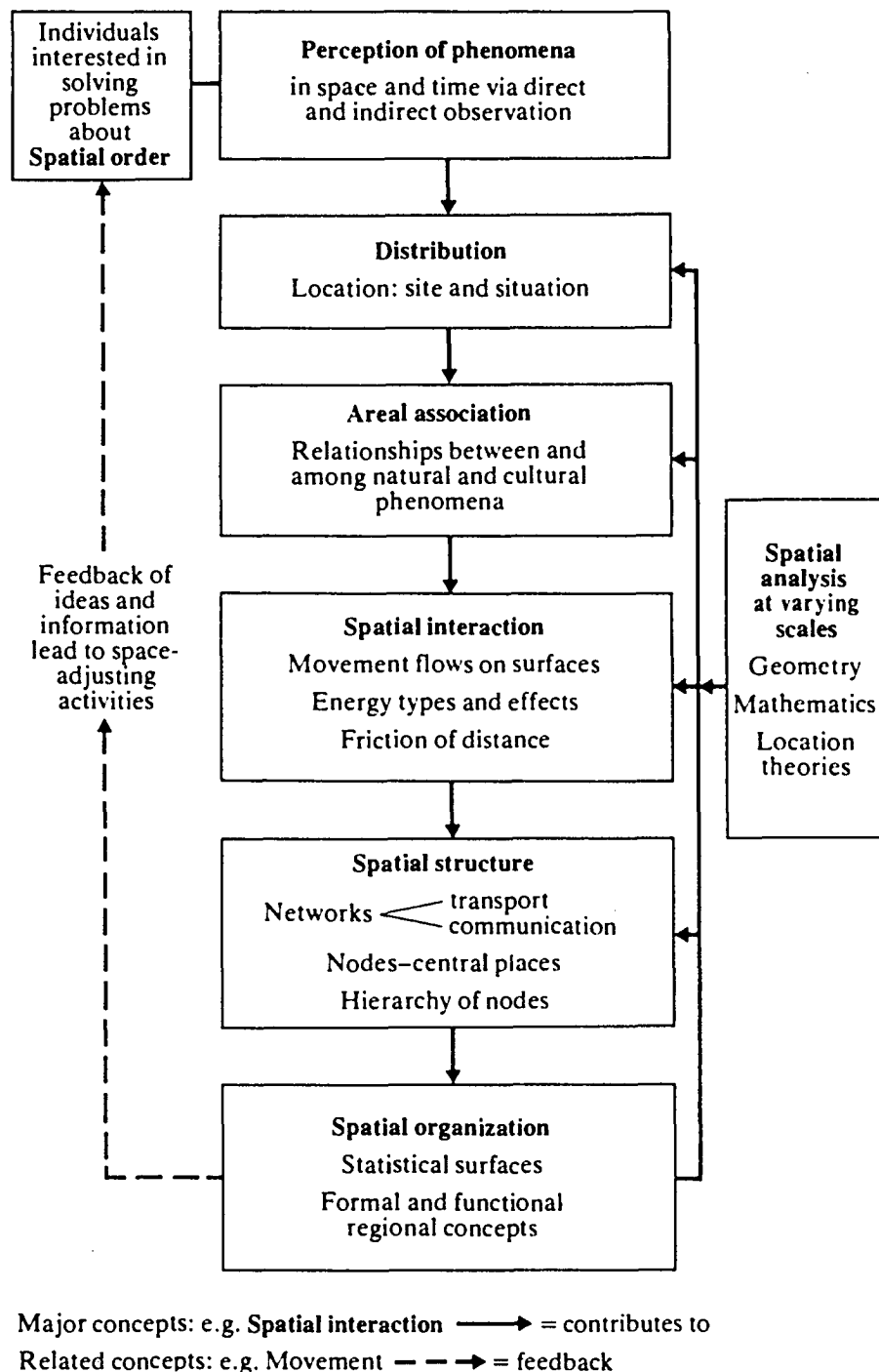


Figure 4.6

A conceptual model for curriculum development based on the spatial organization paradigm. (Emphasis is on the study of spatial structures and processes contributing to spatial organization and formulation of spatial theories with predictive functions).

(Biddle, 1982, 292)

Structure content in school course

In order to structure content in school courses it is necessary to take into account different aspects (see Graves, 1979):

a) The school total curriculum structure

It is necessary to take into consideration the place of geography in the school curriculum:

- 1 - Is the study of geography prescribed for all school years or not?
- 2 - Is geography compulsory or optional?
- 3 - Is geography a separate subject throughout the school course?
- 4 - Is geography part of a combined course? (years?)

Specially in compulsory education it is necessary to take into account other subjects contributing to the common curriculum: the contribution of all disciplines to pupils' education and the specific contributions of geography.

In the case of combined studies it is necessary to ensure that basic geographical concepts, principles, theories, laws and skills are included.

Another problem pointed out by Graves (1979) is whether any particular framework needs to be used to structure the content: regional or systematic (as traditionally), thematic or concentric framework. The author prefers a thematic framework rather than no framework at all, because at research level geography is largely thematic and these themes often correspond to problem situations in society, the spatial aspects of which geography may give a contribution to their understanding, and as such students may see some purpose in the thematic framework.

b) Sociological and psychological considerations

Sociological considerations concern for instance, the problem of deciding whether the same process of education should be applied to all pupils irrespective of their social background, otherwise one might get into a situation in which one kind of geography was taught to working class children who are expected to underachieve and another type to middle class children who are expected to overachieve (Graves, 1979).

Young (1971 a) also refers to issues raised by sociologists concerning the likely results of imposing a common system of knowledge on all pupils.

In Portugal, since 1975, basic education is the same for all pupils, but the problem of different achievement according to social class background still remains.

Psychological considerations should be taken in account too.

Bennetts (1981) argues that an important element in the structure of courses is progression. A syllabus needs to show progression. Progression 'relates directly to what pupils learn, and its planning and evaluation require a clear conception of qualities and a good sense of direction. Progression is to be sought, not in some sequence of specific topics, but in the development of ideas, skills and sensibilities, for which the lesson content and activities should at least in part, be designed' (p. 166).

The author points out (p. 175) the need for teachers be sensitive to their pupils' maturity and to match pupil's interests and capabilities with appropriate experiences and tasks, because 'whether or not we accept Piaget's conclusions that children pass through a number of distinct stages, it is clear that as they grow older they develop different styles of thinking and problem solving and they only gradually acquire the ability to appreciate some forms of reasoning'. Bennetts give examples derived from empirical investigation: the children's ability to read, interpret and draw maps (Catling, 1979), the understanding and judgement of adolescents (Rhys, 1972).

Naish (1982) in an article entitled 'Mental development and the learning of geography' presents a summary of the influence of certain psychological variables on the teaching and learning of geography. Psychological variables must be considered in planning classroom experiences or field experiences as well as selecting content meaningful for them.

The author (1982) refers to the works of psychologists: in the development of children's thinking (Piaget, 1929, 1962); on moral judgement (Piaget, 1932) and moral development (Kohlberg, 1975); with implications for conceptual learning (Vigotsky, 1962; Bruner, 1960, 1967; Gagné, 1970); on spatial conceptualization (Piaget and Inhelder, 1956); and finally on perception (Piaget, Saarinen and others). In this article evidence is shown of the implications of these works on the teaching and learning of geography

(geographers tried to apply psychologists findings to geography teaching).

It is also fundamental to take into account the problem of relevance in education which was mentioned above (see p. 36): relevance to society, to culture, to students, to teachers, to the community is judged of greatest importance.

- c) Graves says that is also necessary to take into account 'situational' variables: the location and architecture of the school; local resources; staff available.

It is evident that in a centralized system such as the Portuguese one, the consideration of these variables raises new problems, because it is necessary to structure one curriculum for the whole country. Obviously the location, architecture, resources and staff qualifications vary from school to school, and consequently it seems appropriate to design a curriculum with a structure that will permit an adaptation to different school situations because in a centralized system, adaptation to situational variables is possible mainly at instructional planning level.

Curriculum evaluation

Different approaches to curriculum evaluation have already been mentioned.

It now seems evident that there is a generalization in use of approaches that give importance to qualitative aspects, to description and interpretation and not only to measurement and prediction.

In geography, Marsden (1976 b, p. 3) defines evaluation as 'the making of qualitative and quantitative judgements about the value of the various curriculum processes'. For this author (idem, p. 5) evaluation is 'critical *at each stage of* the curriculum process, from the first stage of evaluation of the broad aims of a course, to the late stage of evaluation, which instruments of assessment to use and the final one of making judgements anew on the basis of the evidence which these instruments provide. Decisions made at a particular stage will affect and even prescribe those at subsequent stages, while these in turn will feed back to previous ones'.

There is a vast literature on assessment in geography (Senathirajah and

Weis, 1971; Kurfman, 1970; Salmon and Masterton, 1974; Marsden, 1976 b; Graves, 1982 a; Jones, 1985).

Different evaluation approaches which combine qualitative and quantitative techniques of evaluation were used in geography projects and courses.

Kurfman and Richburg (1970, p. 40) stated in the final report of the High School Geography Project - HSGP (1970) that evaluation played a vital role in the curriculum development work of the project. 'Evaluation efforts conducted during the writing of *Geography in an Urban Age* contributed insights that ultimately resulted in significant improvements in the teachability of the units. Achievement and opinion data were used to determine what revisions to make. This information was then relayed back to the unit developers and course editors'.

In relation to the 'Geography 16-19 project' the project team (Naish, Rawling and Hart, 1987) stated that due to the fact that priority was given to enquiry-based learning there was a need for a wide range of assessment methods and techniques. Figure 4.7 shows a 'detailed scheme of assessment for Project-based CEE (CSE) Course. (It is an example from a one-year course which has been running at Hartcliff School) and it shows evidence of the importance given to a wide range of assessment types.

The project team besides assessment methods and techniques developed a system of 'illuminative' evaluation which included: an analysis by local 16-19 groups of their own classroom experiences and communication of their analysis back to the team; specific evaluative information about the courses and materials from individual 16-19 geography departments; opportunities for discussion and critical comment at Project meetings; individual teachers presentation of evaluative summaries of their experience; and team visits and interviews with 16-19 teachers and students.

The project team accepts the statement of Lawton (1981) that 'evaluation is much wider than measurement. Although it does not necessarily exclude the use of assessment or measuring techniques, it does direct attention to other aspects of the learning process and its context. Evaluation is concerned more fundamentally with deciding on the value or worthwhileness of a learning process as well as the effectiveness with which it is being carried out'.

In Portugal evaluation of the geography curriculum has never been carried out systematically. Modifications introduced in the curriculum were mainly based on curriculum developers' opinions, on teachers' individual opinions expressed to

the curriculum developers and on examinations results. Nevertheless evidence will be shown that in some cases curriculum alterations were caused by political changes consequently resulting in alterations in the dominant educational ideology.

Written examination – 60%

There will be one examination paper lasting 2¼ hours. The use of an approved atlas will be allowed. There will be 3 sections covering 3 major themes.

Section A	The Challenge of Natural Environments	(Theme 1)
Section B	Use and Misuse of Natural Resources	(Theme 2)
Section C	Issues of Global Concern	(Theme 3)

Within each section or theme there will be two resource-based questions set, both on the core module of that theme. Candidates must attempt one question from each section. This part of the examination will test written communication, recall, comprehension, analysis, interpretation, evaluation and synthesis.

Course work – 40%

There will be one coursework assessment taken by ALL students. This will be set on 'Employment in the Local Environment' (Theme 4) and will be assessed in the form of

(i) a data analysis test	5%
(ii) a decision-making exercise	8%
(iii) an essay	12%
	<hr/> 25%

Coursework folders

This will be a folder compiled throughout the course by the student and will be marked out of 15%. The elements, or reports, in this folder will be made up from the following modes of enquiry learning.

- 1 Audio/visual stimuli (TV/Radio/Film)
- 2 Visiting speakers
- 3 Field visit – individual
- 4 Field visit – group
- 5 Written resources
- 6 Primary sources (data)
- 7 Interviews
- 8 Group tutorials

Five units of work must be presented, each being awarded a maximum of 3% making a total of 15%. At least three separate modes of enquiry learning must be represented.

First examined 1982.

Figure 4.7

Avon Geography 16-19 Group. Detailed scheme of assessment for Project-based CEE (CSE) Course.
(Naish, Rawling and Hart, 1987, 205)

Specially during teacher training, teachers in charge of teacher training or undergoing teacher training tried to develop assessment methods and techniques.

Specially since 1986 Portuguese geography teachers have been asked to collaborate in environmental education projects. These projects are co-ordinated by the DGES. Cavaco (1986) was then in charge of doing the project evaluation and says that quantitative and qualitative methods were employed but the last ones prevailed. Evaluation procedures included diary records, scaling methods, questionnaires, interviews and observation.

The Instructional Planning Level

Figure 4.3 represents Graves' model for curriculum planning at the instructional level. The author points out that 'planning at this level needs to be based on the content suggested by the general planning level and yet be flexible enough to adjust to what may be important but passing events' (op. cit., p. 50). At this level planning should take into account students and teachers characteristics, school location, architecture, equipment and resources. Teachers strategies are also affected by the characteristics indicated above.

The use of the 'situational' model developed by Skilbeck (1984) (see Chapter 3) could be very useful at this curriculum planning level. This aspect will be developed in the last chapter of this work.

As Marsden (1976 b) pointed out evaluation is needed at every stage of the curriculum process (see p. 69) and at this level feedback to future teaching units and feedback to General Planning Level is needed.

4.3 Curriculum Development Projects in Geography

It seems useful for curriculum planners to examine previous projects in geography to see the advantages and inconveniences of different curriculum development practices put forward by others.

The Earth Science Curriculum Project (ESCP) and the High School Geography Project (HSGP) developed in the USA in the 60's are two projects of relevance to geography and examples of a style of curriculum development which were to have later parallels in Britain.

The first of these projects ESCP has received little attention in Britain (Hall, 1976) and the second one the HSGP, had some impact on British geographical education.

The ESCP is mainly a study of the evolution of the planet Earth written by scientists and teachers. One book 'Investigating the Earth' was published in 1967 after three years of school trial and two trial revisions. The approach of ESCP is enquiry-based, with a range of scales from planet to atom within the same context area, to support the more abstract principles used.

The study has 26 different topics and according to Hall (1976), geographers in Britain are only concerned with five of these topics: Water in the Air; Energy, Moisture and Climate; the Land Wears Away; Mountains from the Sea; and Evolution of Landscapes. This fact probably explains why the ESCP received scant attention from British geographers.

In Portugal this project had some influence probably because it was translated into Portuguese and published in 1975, in Brasil. In the bibliography indicated for the 7th and 11th years of schooling (in both cases in 1979) the volumes I and II of the ESCP book 'Investigando a Terra' are included.

The ESCP was written by over forty scientists and secondary school teachers working together during a couple of months, divided into small teams. Editors and illustrators worked with the teams. Material was written, reviewed, edited, revised and rewritten. The first version (in draft form) was used by teachers who were carefully selected. Their comments and criticisms were the basis for further editing and revision before going into final printing.

The HSGP began in 1961 and W. Pattison the first director organized conferences with academic geographers, teachers and educators where they drafted a curriculum proposal. A dozen teachers developed new materials and academic geographers served as subject matter consultants. N. Helburn (1983) says that this model of curriculum development helped individual geography teachers, but resulted in practically nothing which could be circulated to help more teachers. A pamphlet was written by Clyde Kohn with the best he could gather from the work of these teachers, but it had little impact because American teachers were not sufficiently trained in the discipline to find its most powerful explanatory ideas.

HSGP shifted to a model of leadership⁵. The steering committee was made up of academic geographers. The development of material was done by small teams led by one or two university geographers working with teachers, other educational specialists and, where available, editors. They had six to nine months and money to develop materials, they were tried in a few classrooms and then revised. To Helburn this model of development working in small teams allowed much greater flexibility than the ESCP writing conference model.

To Kurfman and Richburg (1970) evaluation played a vital role in the curriculum development work of the HSGP. Evaluation conducted during the writing of 'Geography in Urban Age' contributed to significant improvements in the teachability of the units. Achievement and opinion data were used to determine

what revisions to make and this information was then relayed back to the unit developers and course editors.

HSGP was published in the form of a complete one-year course that includes student resources, teacher's guide, color slides, audio tapes, student work manuals, decks of role cards, activity sheets, overhead transparencies and hardware models. Each lesson in the whole course carries detailed instructions for classroom organization and procedures. Typical of these suggestions are open-ended inquiry questions which focus on materials rather than on people, questions for which there are no 'correct' answers (Gunn, 1972 a). The course is entitled 'Geography in an Urban Age'. It is a one-year course for students aged fourteen to sixteen and the materials are divided into six units: Geography of Cities; Manufacturing and Agriculture; Cultural Geography; Political Geography; Habitat and Resources; Japan (see Figure 4.8).

Unit	Integral Activities	Related Optional Activities
1 Geography of Cities	<ol style="list-style-type: none"> 1. City Location and Growth 2. New Orleans 3. City Shape and Structure 4. Portsville 5. Sizes and Spacing of Cities 6. Cities with Special Functions 	A Tale of Three Cities Bruges Time-Distance Migrants to the City Megalopolis Local Community Study Local Shopping Survey
2 Manufacturing and Agriculture	<ol style="list-style-type: none"> 1. Geographic Patterns of Manufacturing 2. The Importance of Manufacturing 3. Location of the Metfab Company 4. Graphic Examples of Industrial Location 5. Hunger 6. The Agricultural Realm 7. Interviews with Farmers 8. The Game of Farming 9. Enough Food for the World 	Locating Metfab in the U.S.S.R. Two Case Studies
3 Cultural Geography	<ol style="list-style-type: none"> 1. Different Ideas About Cattle 2. A Lesson From Sports 3. Expansion of Islam 4. Canada: A Regional Question 5. Culture Change: A Trend Toward Uniformity 	Games Illustrating the Spread of Ideas Supplementary Reading: The Long Road
4 Political Geography	<ol style="list-style-type: none"> 1. Section 2. One Man, One Vote 3. School Districts for Millersburg 4. London 5. Point Roberts 	
5 Habitat	<ol style="list-style-type: none"> 1. Habitat and Man 2. Two Rivers 3. Watchung 4. Rutile and the Beach 5. Flood Hazards 6. Water Balance 7. Waste Management 	
6 Japan	<ol style="list-style-type: none"> 1. Introduction to Japan 2. Traditional Japan 3. Japan Today 4. The Modernization of Japan 	

Figure 4.8
Geography in an urban age - activities by unit.
 (Patton, Ed., 1970, 4)

Helburn (1983) states that the initial orientation of the HSGP was towards positivist science, but certain of its activities should have served to ameliorate the worst excesses of scientific objectivity in a human science. The proposed inquired-based approach and the questions for which there are no 'correct' answers counter the view of a crude positivist objectivity.

Helburn states that in the USA the influence of the HSGP was small and after some effort made on teacher training (not enough due to the lack of money) only a few teachers were using the materials. He explains that within the social system as a whole, schools serve a system maintenance as well as a system improvement function, most teachers in most schools are so concerned with the socialization of students that they will not use inquiry materials. Single right answers are preferable to multiple or ambiguous solutions when the teacher wants to reward the conforming student and penalize the others. The HSGP includes 'exciting challenging materials' but 'the evidence points to a conclusion that schools in general are not ready to adopt materials that make geography come alive in the classroom' (Helburn, 1983).

A revised version of the HSGP was published in 1980 and a new interest in geography grows in the USA.

With respect to the influence of HSGP on British geography, Graves (1968 a, p. 70) states that there was in the HSGP, a greater tendency to develop theoretical models which had been the case in UK schools since 'we have tended here to think in terms of what James Fairgrieve called 'real geography', that is to emphasize that, when an area is being discussed an accurate image of what it is really like is the important thing to convey to pupils this, of course, is a laudable enough aim, though it could limit the teacher to what might be called 'descriptive' geography 'and has a tendency to put over an image of geography as an 'idiographic' subject, concerned with the unique personalities of certain regions, although much of the geography done at higher level is not of this kind. Now in the HSGP although there are plenty of examples taken from reality, there is also an attempt to use models of reality'. As a conclusion the author argues that he is not claiming that the materials produced by the HSGP could be transposed without modification to a British situation but that geography teachers in the UK ought to become familiar with this project and the ideas behind it.

Walford (1981 a) states that the HSGP was the first attempt to translate 'new geography' to secondary school level, and its units of work were influential among English innovators, although its selling price was far too high ever for it to have great commercial success in the UK ⁶.

The Schools Council Projects

'The Schools Council for the Curriculum and Examinations' that began to operate in 1964 was in charge of advising on Curriculum and Examination matters. It was advisory not only to the ME alone, but to all interests. Teachers had a majority on most of the important Council committees.

From the beginning the Schools Council role was not to determine schools curricula, but to make available a wide choice of materials and suggestions. It had a very important role in promoting, organizing and financing curriculum change in Britain. It had a programme of curriculum development projects that Lawton (1983) states must be called a cafeteria basis: teachers would be offered three or four different kinds of science and each school would choose or not projects on different subjects according to the needs and interests of its pupils. The author (1983, p. 127) states that 'this doctrine was perhaps a combination of a genuine dislike of too much central control, plus an over-optimistic view of what the average school could achieve without guidance (or possibly an underestimation of the difficulties involved in curriculum planning, curriculum innovation and, above all, the problem of disseminating good ideas from the centre (Schools Council) to the periphery (the schools)'. But the same author argues that 'much of the curriculum development work of the Schools Council was of a very high standard'.

Among the curriculum development projects several concerned Geography and 'Geography for the Young School Leaver' was one of the most successful Schools Council projects.

The 'Geography for the Young School Leaver Project' (GYSL)⁷

The major recommendation of the Newsom Report was that the school-leaving age should be raised from 15 to 16 (which happened during the academic year 1973/74). The GYSL was set up as part of the School Council's programme for the raising of the school leaving age.

The project started in 1970 and according to the project team coordinated by T. Higginbottom, its aim was 'to investigate the contribution that geography might make to the education of 14-16 years old, with the premise that 'all pupils, irrespective of ability, should be given the opportunity to explore similar basic ideas at different levels of sophistication'. The GYSL was specially addressed to pupils

of average or below average ability but the aim of the project team was to research materials and teaching methods which could be adopted for use right across the ability range. The project team produced multi-media packages containing a teacher's guide, teacher materials and sufficient pupil materials for a class (the packages include maps, filmstrips, slides, overhead projector transparencies and games). The packages are on three different themes: Man, Land and Leisure; Cities and People; People, Place and Work.

According to T. Higginbottom (1980) ⁸ it is necessary to look to the key principles upon which the GYSL development work was based to know what sort of geography is transmitted by the project. These are:

1. The need to focus as much on the objectives of school geography as on the design of learning experiences. This involves a consideration of the knowledge which is to be acquired, the concepts and key ideas to be understood, the skills mastered and the attitudes and values to be clarified;
2. The importance of recognizing that school geography concerns cognitive learning (knowledge and understanding), as well as affective learning feelings and emotions;
3. That the objectives of teaching geography in the 14-16 age range are common to pupils of all abilities, a principle consistent with the aims of comprehensive education;
4. A recognition that geography in schools exists primarily to serve the needs of pupils; to prepare them for life in a modern industrial society and to make them adaptable in order to meet the demands of this society. Consequently there should be emphasis on problem solving and enquiry-based learning;
5. The content of the subject should be concerned with spatial 'patterns' and the 'processes' which determine them (this involves a consideration of both man/land and man/man relationships); 'precision' identification and investigation of the fundamental spatial concepts associated with the discipline; 'precision' also implies that it is necessary that pupils must observe measure and quantify accurately; 'prediction' the use of predictive models as an aid to understanding;
6. The content should contain a balance between local, national and international contexts;

7. There should be a balanced variety of classroom activities (for example, between didactic teacher presentation, worksheet schemes (individual or group); discussion work in groups, role play, operational games, fieldwork and data collection in order to motivate the pupils);
8. An attempt should be made to relate the content of geography with other curriculum areas (for example: English, arts, etc) in order to develop certain skills;
9. To see testing in schools not merely to rank pupils, but essentially to determine whether or not objectives have been achieved, and consequently to evaluate and plan the teaching process;
10. External examinations should reflect the above principles and not impose constraints upon classroom activities. The dialogue between examiners, moderators and teachers should be as close as possible, as part of the process of evaluation.

In 1981 all fourteen CSE boards had already accepted Mode 3 syllabuses based broadly on the project's themes and eight had established Mode 1 or 2 schemes. GCE boards operated GCE O-level syllabuses based on the project's themes and the same happens now in relation to the new examination the GCSE - General Certificate of Secondary Education. A research undertaken by the Council's Impact and Take-up Project showed that 66% of geography teachers had been in contact with the project; 54% of heads of geography departments used it; and there was at least one person making some use of the project in half of the secondary schools in England and Wales (Steadman et al., 1981).

Stenhouse (1980) observed that GYSL 'started with a resolution to disseminate vigorously and in terms of adoption it is the most successful of all Schools Council projects'.

Boardman (1985 b) argues that much of the success of the GYSL Project may be attributed to its carefully managed dissemination. GYSL dissemination strategy was based on co-ordination at three levels: national, regional and local. At national level there was a co-ordinator, a member of the original project team responsible for organizing a national project resource centre at Sheffield and for maintaining liaison with 12 regional co-ordinators, most of whom were college of education lecturers. At regional level England has been divided into nine regions

each consisting of a number of local education authorities (LEAs), Wales, Scotland and Northern Ireland constitute the other three regions. The regional co-ordinators that had a key role in dissemination, organized residential training courses to teams of teachers from different LEAs (each team had a local co-ordinator) or conferences only to local co-ordinators (local co-ordinators were in most cases an adviser, inspector or teacher's centre leader, but occasionally a college lecturer or senior teacher). The purpose of these courses and conferences was essentially to familiarize teachers with the project's ideas and materials. At local level, the local teams with its co-ordinator had the function of enabling teachers to collaborate during the period of project implementation; the groups collected local resources, which were sometimes developed into local curriculum units or case studies (relating to topics similar to those in the project's three themes) (Boardman, 1980).

The GYSL project adopted the centre-periphery model as the main approach to its national dissemination strategy but it also used the proliferation of centres model at both the regional and local levels.

Boardman (1988) analysing the GYSL dissemination process uses the Schon's (1971) models of the diffusion of innovation (see p. 37-38). According to the author in GYSL 'the initial use of the centre-periphery model at national level was supplemented by a strategy which ensured a proliferation of centres. The primary centre supported and managed the secondary centres represented by the regional co-ordinators, where there was stability and continuity through the project's life. The weakness of the system lay at the local level where the primary and secondary centres could offer their support but had to respect the autonomy of individual schools. The result was that patterns of shifting centres emerged within LEA boundaries; project schools appeared and disappeared, often to be replaced by others' (Boardman, 1988, p. 93).

The success of GYSL can be explained by the fact that besides the dissemination process, it furnished teachers with all the resources they needed in the classroom; each topic could and was exploited in the local situation of one school, to be of interest to the pupils and relevant to their lives; it was adaptable for use right across the ability range of pupils, which was very important during a period where the number of comprehensive schools was growing rapidly; and finally it introduced in 'an easy way' to teachers the 'new' geography in the classroom, motivating at the same time the pupils through the variety of activities it proposed.

'The Geography 14-18 Project' ⁹

In justification of the relevance and interest of the project, the 14-18 Project team states that research revealed a growing dissatisfaction among many teachers both with the geographical content of their courses and with the teaching methods they felt compelled to adopt as a result of the existing examination syllabuses, particularly at O-level, and of the mode of assessment used by the boards: over-emphasis on factual recall in examination papers and the dominant position of regional geography in many syllabuses. Teachers would have liked to make the teaching of geography for able students more stimulating and intellectually exciting; they would have liked to incorporate new developments in the subject into the curriculum and to make the teaching of geography relevant to real-world issues by linking it with planning and development problems in developed countries and the Third World (Tolley and Reynolds, 1977).

The project was established in 1970, the same year as GYSL and was aimed principally at the more able pupils in the 14-18 group, but in 1972 the project team took the decision to concentrate on developments at O-level, and became a project for the 14-16 age range due to limitations of resources and because it was thought that change was more urgently needed at this level. As was seen above, GYSL was specially concerned with the same 14-16 age-range, but for pupils of average or below average ability (at least initially). Both projects accepted the idea that it was desirable that changes in university geography (the 'new' geography) should influence the geography taught in schools but they differed as to how this might best be done. It has also been indicated that the GYSL team prepared packages with all the materials needed for classroom teaching, the 14-18 Project team policy 'was aimed at developing the resources, modes of working and organizational support which would increase the ability of teachers to make curriculum improvement a school-based activity and hence an integral part of their work. It is, therefore a policy of enhanced professionalism' (Tolley and Reynolds, 1977, p. 2).

The project team formulated a threefold strategy:

1. developing new examinations which gave teachers a greater say in syllabus planning and the assessment of their pupils;
2. providing support for teachers through teacher groups, and in-service courses;

3. publishing resources and a teacher's handbook, and by maintaining a resource bank of teacher-produced materials.
(Schools Council, 1980).

Hickman, Reynolds and Tolley indicate the sort of geography that was transmitted by the project:

A 'new geography' more critical of concepts and models that had previously been taken largely for granted (there is a need for quantified evaluation of how well models and concepts used in geography match the real world) more enterprising in devising new models and in borrowing ideas like systems-analysis, or methods of evaluation from other subjects. 'Of course this... does not mean that all geography must now involve explicit consideration of concepts and models, still less formally quantified analysis or hypothesis-testing; or that there is no place for descriptive and regional studies. But it does mean that geographers need to be clear about the purpose and assumptions underlying particular studies' (Hickman, Reynolds and Tolley, 1973, p. 3).

Walford (1980) (A regional co-ordinator for 'Geography 14-18') states that the rubric at the head of the 14-18 O-level paper conveys more eloquently than any explanation, the spirit of geographic learning intended and the purpose of the examination: 'Some of the questions probably contain information about places which neither you nor the other candidates have studied in detail. This should not prevent you from attempting these questions - it is not your factual knowledge of these places which the examination is trying to test but your ability to use skills and ideas and to interpret and apply information. The use of an atlas is permitted in the examination room' (Walford, 1980, p. 21).

'In 1980 nearly 5.600 candidates from 120 schools sat the O-level examination based on the project's approach and many more followed related CSE courses. In September 1980 a pilot group of schools started courses leading to a project-based 16 + examination' (Schools Council, 1980). The O-level scheme was a radical innovation in that only 50% went to a common final examination consisting of data response questions; 30% for five units of coursework devised and assessed by the teacher and 20% for an individual study assessed by the teacher. (The internally assessed components were externally moderated).

In order to disseminate the project, the project team worked with 10 pilot schools from 1972 to 1974. The team helped teachers to be involved in the process

of school-based curriculum development (reconsidering their aims and methods, developing their own materials and acquiring expertise in assessing their pupils' work). Candidates from the 10 pilot schools sat the first examination in 1974. Dissemination was undertaken by asking LEAs to form a consortia of schools (5 or 6 schools) to prepare candidates for the new O-level examination.

The results of this dissemination in the words of Boardman (1980) have been very modest: 2% of the secondary schools in England have implemented the project's scheme. A few schools in Northern Ireland have adopted it, but no schools in Wales or in Scotland have done so. The same author argues that the main reason for the slow rate of adoption is the extra burden of preparation and marking which is placed upon teachers.

Making a comparison with the GYSL project, Boardman says that the contrasting strategies and result impact of these two geography projects for the 14-16 age range will be apparent. The order of priorities in GYSL dissemination strategy was first, materials production; second, teacher involvement; third, examination renewal. Geography 14-18 reversed these priorities, putting examination renewal first, since this then facilitated full teacher involvement, which in turn resulted in the preparation of teaching materials. Ideas from the Geography 14-18 O-level scheme spread to average-ability pupils as teachers negotiated parallel CSE courses. Conversely, GYSL ideas spread to above-average ability pupils through an O-level scheme. These facts demonstrated the possibility of a common system of examining at 16-plus proposed for the mid 80's (Boardman, 1980) ¹⁰.

'The Geography 16-19 Project'

This project was one of the last of the major Schools Council curriculum development projects. The project's work started at the Institute of Education University of London in 1976.

The aims of the project were (1) to involve teachers and lecturers in a reconsideration of the objectives, content and teaching methods of geography courses for the 16-19 age group, and (2) by means of this involvement, to help them to appreciate the significance of their role as curriculum developers.

In the research phase of the curriculum development process, in order to provide a basis for development work, the project team undertook a survey of the

16-19 geography curriculum as it was in early 1977: an analysis of the needs of 16-19 students in full-time education; and an analysis of the nature of the subject and its potential contribution as a medium for education. This led to a statement of broad aims for 16-19 courses. In order to operationalise these aims a Project curriculum framework was produced, which included concepts, skills and values from which to construct courses at differing levels for 16-19 year olds.

In the implementation phase this framework was put into action. This was achieved through the development of courses at Advanced level and the Certificate of Extended Education and through constructing a module for BTEC courses at the National level. Latterly the Project also produced guidelines on the contribution of geography for 17+ courses, focusing in particular on the CPVE (Certificate of Pre-Vocational Education).

A network was then established of approximately ninety schools and colleges for the purposes of development, evaluation and dissemination of all aspects of the project's work. Teaching materials to support these courses were developed by the team, by linked teachers and by specialist authors. The trial materials were evaluated in schools and colleges. These materials included suggested strategies for teaching. A selection of materials was published. Examination courses have also been evaluated and ameliorated. To disseminate the Project conferences were organized from late 1983, to stimulate the development of local teachers groups working in the Project.

The Project's team shows evidence of the importance that an effective concurrent evaluation had throughout the Project's life (Schools Council, 1981 a; Naish, Rawling and Hart, 1987).

The curriculum framework shows evidence of the sort of geography that was transmitted by the project: a distinctive approach to geography: the Man-Environment with an 'emphasis on the examination of questions, issues and problems arising from man's interrelationships with his environment. "Environment is used in its widest sense, to include the physical, socio-cultural and behavioural environments influencing and influenced by man"; a statement of aims in accordance with the approach; and four major themes summarizing the approach: 1 - 'Natural Environments - the Challenge for Man' - 'this theme focuses on understanding the complex interrelationships between man and natural systems and environments'. 2 - 'Use and Misuse of Natural Resources' - 'this theme will provide the opportunity for consideration of the nature of resource supply and demand, changing attitudes

to resource use, further resource development and the environmental and spatial consequences of the way man obtains and uses resources'. 3 - 'Man Environment Issues of Global Concern' - 'this theme is concerned with important questions about man's relationship with his environment... which may be considered to be of global concern in that they have actual or potential implications for the whole of mankind'. 4 - 'Managing Man-Made Environments and Systems' - 'Under this theme, the emphasis is on man-made systems and structures such as transport systems and built-up areas, which have been created to enable man to fulfil his varied needs in an increasingly complex world'.

The framework also includes knowledge principles based on the approach and a set of key questions and guiding concepts, suggestions on coverage of a range of scales and environments and guidance on enquiry-based learning in order 'to offer advice on the construction of geography courses for 16-19 year-old students' (Geography 16-19 - Main Elements of Curriculum Framework for Geography 16-19, March, 1980).

In the 'Curriculum Framework' dated May 1985 it is pointed out that it consists primarily of: a distinctive approach to geography (where 'man's inter-relationships with his environment' (1980) is replaced by 'people with their varied environments' (1985), and an enquiry-based approach to learning (Geography 16-19 - The Curriculum Framework, May, 1985; Naish, Rawling and Hart, 1987) (see Figures 4.9, 4.10 and 4.11).

It was mentioned above that the framework was put into action through the development of courses at A level, CEE, BTEC and CPVE. The A level syllabus project is now examined by the University of London, Schools Examinations Board on behalf of all the GCE Examining Boards. The A level assessment - 65% goes on two examinations papers, set and marked by the Board; 24% goes in coursework and is set and marked by the teacher and 11% goes on Individual Study, marked internally by teachers and moderated by the Board.

Boardman (1980, p. 116) points out that there is 'a fundamental difference between Geography 14-18 and Geography 16-19. In the earlier project the emphasis was on changing the examination system before teachers could become involved in curriculum development. In Geography 16-19 the emphasis from the start has been on the involvement of teachers as curriculum developers'.

An approach to geography which:

- focuses on the inter-relationships between people and their environments
- takes as its starting point enquiry into questions, issues and problems of relevance in the world today
- offers a clear perspective on the contribution of geography to environmental understanding and to environmental action
- provides opportunities for organising study in an enquiry-oriented sequence so that students can develop a range of skills
- facilitates the introduction of controversial topics and the provision of opportunities for values enquiry
- is outward looking and encourages links with other subject areas and with activities beyond school
- emphasises understanding and awareness of place and space
- enables students to gain useful knowledge about a balanced selection of areas and places in the world
- offers the possibility for enquiry to draw on new approaches to geography as appropriate to the topic

Figure 4.9

Characteristics of the approach to geography.
(Naish, Rawling and Hart, 1987, 41)

An approach to learning which:

- identifies questions, issues and problems as the starting points for enquiry
- involves students as active participants in a sequence of meaningful learning through enquiry
- provides opportunities for the development of a wide range of skills and abilities (intellectual, social, practical and communication)
- presents opportunities for fieldwork and classroom work to be closely integrated
- provides possibilities for open-ended enquiries in which attitudes and values may be clarified, and an open interchange of ideas and opinions can take place
- provides scope for an effective balance of both teacher-directed work and more independent student enquiry
- assists in the development of political literacy such that students gain understanding of the social environment and how to participate in it.

Figure 4.10

Characteristics of the enquiry-based approach to learning.
(Naish, Rawling and Hart, 1987, 46)

AIMS FOR COURSES DERIVED FROM THE CURRICULUM FRAMEWORK:

Courses should enable candidates to acquire:

Awareness and understanding

- 1 an awareness of the geographer's contribution to understanding and attempting to resolve environmental questions, issues and problems at different scales, and so an understanding of:
 - (a) the key questions and guiding concepts of geography
 - (b) the functioning and characteristics of both natural and human systems and their inter-relationships
 - (c) methods of recognising, describing and analysing the spatial consequences of inter-relationships between people and their environments
 - (d) processes operating to produce spatial patterns and structures.

Knowledge

- 2 knowledge of some regional and systematic aspects of the geography of selected parts of both the developing and the more developed world
- 3 knowledge of the global implications of some important environmental issues in the modern world

Skills

- 4 a degree of competence in practising a range of intellectual, social, communication, practical and study skills, including particularly the ability to use and prepare maps of different types and scales
- 5 the ability to use such skills in following through logical steps in geographical enquiry and the clarification of values

Attitudes and values

- 6 an attitude of concern for the quality of environments, for the condition of human life and for the biosphere as a life support system
- 7 the ability to relate to the environment and to sense conditions which either enhance or threaten survival of living things
- 8 an approach to learning which will facilitate awareness of the nature and significance of attitudes and values in environmental questions, issues and problems
- 9 the opportunity to clarify and develop personal values in relation to environmental questions, issues and problems

Figure 4.11

The character of Geography 16-19 courses.
(Naish, Rawling and Hart, 1987, 51)

As was indicated above the Geography 16-19 dissemination took place by means of courses and conferences and publications, contributions to working groups and committees, and through the participation of Project teachers. A major dissemination action took place in 1983-84, initiated by a letter to all schools and colleges with 16-19 year old students and to all LEAs in England, Wales and Northern Ireland. Later a dissemination conference programme was organized and recently the team planned a full regional network increasing the number of co-ordinators and local curriculum groups and ensuring LEAs support. In 1987 the network was not complete but according to the Project team (p. 234-235) 'the Geography 16-19 policy of continual dissemination throughout its life, has provided the vigour necessary to carry it through the transition from a centrally funded and team-administered Project to a genuinely local and school-based development'. The Project team also points out that adequate funding is not

available today. This has undoubtedly rendered the process of dissemination more difficult but the number of 16-19 groups existing, of courses being run and publications being sold is increasing (Naish, Rawling and Hart, 1987) ¹¹.

In a highly decentralized system like that of England and Wales, at the time of the Schools Council Projects being developed, the schools had the control of their own curriculum and the dissemination of a project was dependent ultimately on the interest of the Head of Department (or Departments in the case of Integrated Studies Projects) on it. If the Head (or the teacher in charge of teaching the project) moved, the interest of the school in the project could disappear and Boardman (1988, p. 93) shows evidence in relation to the impact of GYSL of the emergence and disappearance of individual project schools due to decisions taken by those responsible or by the movement of teachers even when there was a national and regional network of support and he states 'the dissemination and implementation of a curriculum project are processes rather than events and they take place gradually over many years. The spread of a project appears to begin slowly before accelerating to reach a peak, only to be followed by a period of contraction, particularly at a time of falling numbers of pupils and increasingly centralized control of the curriculum'.

The analysis of these projects permits one to draw some important conclusions for curriculum development:

- a) The development of teaching materials in small teams, including higher education teachers or other specialist authors, school teachers, other educational specialists and where available editors, illustrators, seems to be appropriate to get good results;
- b) Evaluation conducted during the writing of materials contributes to significant improvements in the teachability of the materials;
- c) The dissemination strategy is fundamental - a process of dissemination based on good co-ordination at three levels; national, regional and local seems to be efficacious. Probably the Schon 'centre-periphery model' (see p. 37) is the most appropriate;
- d) Training courses and conferences are needed to familiarize teachers with the project's ideas and materials;

- e) Materials should be flexible enough to be adaptable to pupils of different abilities and interests; to different teachers' expertise; and to school conditions (location, availability of teaching resources,...);
- f) It seems that teachers adopt teaching packages which contain all the materials needed for classroom teaching more easily.

Nevertheless, school-based curriculum development would demand an increasing ability from teachers to make curriculum improvement, to develop teaching and assessment materials;

- g) These projects can be efficacious in the dissemination of new geographical ideas, teaching strategies and evaluation techniques;
- h) In England and Wales the fact that project syllabuses can be examined by specific examinations give rise to problems of co-ordination with a National Curriculum.

4.4 Curriculum integration

Before ending this chapter it seems necessary to focus on another problem, that of the 'integrated studies movement'.

In Britain the social studies movement was important in later 40's and 50's and in the early 60's it was still alive. It appeared due: to the influence of the USA where it was very successful; to the pressure of subjects in school curricula; to the influence of a new educational theory. For its adherents, education was a social process, the child acquired education through experiences and activities related to the contemporary world. The curriculum therefore ceased to contain separate subjects on traditional lines: these were replaced by 'projects' centred on social topics and by activity methods of study; and finally by the need for training teachers quickly (RGS Education Committee, 1950).

According to Graves, in the late 60's the curriculum of the 'Humanities' side could include different schemes of integrated studies where geography might or might not be involved. At the time 'as far as may be judged, comparatively few schools operate any of these schemes' (Graves, 1968 b).

Nevertheless the integrated studies movement has increased since then

due to three main courses:

Firstly, to the influence of some Schools Council Projects such as: the 'Environmental Studies 5-13 Project', 'History, Geography and Social Science 8-13 Project', the 'Humanities Curriculum Project' and the 'Integrated Studies Project' and of the American project 'Man: A Course of Study' (MACOS), based on the work of Bruner (1966).

Secondly, due to the many contemporary pressures on the curriculum which encourage the introduction of combined studies. Among them, four are particularly influential. They are:

- '1. The need to give the curriculum in all schools a multi-ethnic dimension;
2. the introduction of world studies and peace studies;
3. the forging of links between schools and industrial organizations;
4. the need to protect and conserve the physical and human environment from small and large acts of vandalism' (Williams, 1985, p. 223-224).

Thirdly, due to:

- a) the organizational and administrative context of a particular school (to ease the transfer of pupils between schools, to simplify the timetable or to reduce the range of options for examination candidates);
- b) to the curriculum arrangements within a school (a humanities course for all pupils avoids the need for pupils to choose between history and geography - this is linked with the provision of a core curriculum);
- c) to teachers who favour an open approach to teaching and learning in which subjects boundaries are seen as barriers limiting study; in this open approach there is an emphasis on problem solving and enquiry-based learning, the utilization of fieldwork and of a wide range of resource materials often in open plan classrooms;
- d) to the study of topics or units of work in combined studies which are derived from conventional school subjects (Williams, 1985).

In Portugal, in the past there were attempts at curriculum integration too.

Geography was linked with natural sciences or with history in the curriculum for 10-12 years old pupils. According to the new reform of the education system, geography will be integrated with history in the curriculum for the same age group and both are included with Portuguese and a Foreign Language, inside a pluridisciplinary area - called 'Languages and Social Studies'. The arguments for this integration did not differ very much from those indicated above: it permits a better articulation with learning experiences which occur at primary education level; reduces the range of disciplines and avoids a too early specialization; it favours an open approach to teaching and learning and consequently to the development of multidisciplinary projects.

Kelly (1982) points out that curriculum integration creates theoretical problems¹²; has social and political implications and causes administrative and practical problems too. At school level integration implies changes in the social order of the school. It has implications for the hierarchy of order and control within the school, for teacher relationships with each other, for their roles and for relationships between teachers and pupils. Integration often also raises problems for the organization of the school (accommodation, timetabling); and can make demands on extra-resources (books, equipment, storage facilities), and on the keeping of adequate records. If team teaching is adopted integration creates new roles for teachers; makes new demands on their skills; and also creates the need for adopting new attitudes towards their professional tasks, their colleagues and their pupils. In-service training is necessary to meet these needs. Integration has also important implications for assessment and for public examinations.

Kelly (1982) says that issues raised by integration for schools and for teachers should be carefully thought-out if such a step is to be taken successfully and chaos and confusion avoided.

This issue will be approached again in relation to Portuguese reality as well as the problem of influences and constraints on curriculum development in Portugal.

In the following chapter a historical perspective of the evolution of geography in Portugal, especially at secondary education level will be presented. Marsden (1976 b, p. 73) states: 'no curriculum planning exercise in a subject area can afford to neglect the historical perspective. A subject's traditions, both at the frontiers of knowledge and at school level, are variables to be considered'.

CHAPTER 5

Some Aspects of the Evolution of Geographical Education in Portugal - The Secondary School Curriculum - Its Historical Development

5.1 Introduction

The main purpose of this chapter is to analyse the evolution of geographical education at secondary school level in Portugal. Special importance will be given to the evolution of the secondary school curriculum but also other aspects of geographical education that seem indispensable to explain this evolution, will be mentioned.

For facility of presentation of the facts and their explanation it is possible to distinguish several periods in the evolution of geographical education. For the same reasons different sources of influence on the growth of geographical education are indicated, though they have close interrelationship between them.

Though the evolution of geographical education at secondary level is our main purpose, the evolution of the subject at academic level and primary level will often be mentioned. This is necessary, to give a full explanation of the evolution of the subject at secondary level.

Primary and secondary sources will be used to describe and explain this evolution. The first are legislation and other official documents concerning secondary school education and specially geographical education at secondary level. To explain the evolution of the discipline at academic level secondary sources will be generally employed.

The researcher, conscious that there is a discrepancy between legislation and other official documents concerning geographical education in school and the teaching practised there, will try to show evidence for this lack of agreement. This discrepancy often evidences the difficulties of policy implementation. This last aspect will be further developed in other chapters of this work.

Theories of the evolution of disciplines

As far as the evolution of the discipline at scientific level is concerned, the most frequently employed approach to explain it is that developed by Thomas Kuhn (1962), first, in his book 'The Structure of Scientific Revolutions'. The development

of a science consists, according to Kuhn, of a series of phases. The first pre-paradigm phase is characterized by the individualization of a branch of a science, that becomes the subject for more systematic study, by different schools of thought, which grow around individual scientists. The development from the pre-paradigm period to the stage of scientific maturity or professionalism begins with the problem of delimitation of this specific science from other sciences. The consequent professionalization takes place when one of the schools of thought begins to dominate.

Kuhn says that mathematics and astronomy left the pre-paradigm phase in antiquity, whereas some social sciences left this phase very recently.

A paradigm phase corresponds to a period of 'normal science'. During these periods of 'normal science' there is a widespread consensus among practitioners relating to the nature of the discipline, to what it knows and on what kind of problems it concentrates research. This consensus is expressed in a paradigm which provides a blue print for the evaluation of the results of the research.

A period of 'normal science' is sooner or later replaced by a crisis phase because more and more problems are accumulated which cannot be solved within the framework of the ruling paradigm. They stimulate researchers to seek alternatives, more successful. When such apparently superior alternatives have been identified, a revolution is proposed - this inaugurates a revolutionary phase. When all of the practitioners agree on the superiority of the new paradigm, the old one is overthrown.

According to Kuhn, the history of any scientific discipline is characterized by periods of normal science, with occasional interruptions, or revolutionary periods (Holt-Jensen, 1981).

Kuhn's model was criticized by many authors. Popper (1972) presented science in a normative model of conjectures and refutations. Science is in a perpetual state of revolution. Knowledge is always open to the possibility of being falsified; knowledge is built up by questioning and testing, by discarding that which fails the tests, and by putting that which remains, to further tests.

Lakatos (1970) accepts like Popper, that the purpose of science is to put theories to the test, and like Kuhn argues that most scientists will adhere to a particular theory or approach. However he does not accept Kuhn's idea of quick scientific revolutions, neither does he accept Popper's idea that all scientific activity involves 'revolutions in permanence'. He formulated the concept of the research

programme. This contains a core of irrefutable beliefs, and an outer shell in which the ideas are tried and tested to advance the volume of knowledge. The core is unquestioned and it provides the criteria for judgment. Several programmes may co-exist and compete in a discipline through the acquisition of new knowledge.

The evolution of one discipline at scientific level can also be explained by a contextual approach. Berdoulay (1981) says that in this approach there are two fundamental assumptions. The first one is that there exist changing systems of thought at the same time as there is continuity of certain ideas. The second one is that there is no radical dichotomy between internal and external factors of scientific change. These factors may be viewed only as two points on a continuum, without any sharp distinction. According to this approach, the contents of a discipline reflect the demands made upon it by society. A Society that employs researchers, and can promote particular approaches (or disciplines) which it sees as profitable and to ignore others, in a variety of ways, including the allocation of funds.

Others explain the evolution of the discipline by the emergence of schools of thought. A dominant individual interprets what society requires and translates this into the discipline. He creates a school of thought that in some cases can be a national school. The school leader can have a substantial power over the discipline, favouring adherents to his ideas, through the allocation of employment and resources. In this case changes of view, or of approach must depend on a new generation of thinkers.

In modern disciplines, with many researchers, the dominance of one individual will break down into a somewhat anarchic organization, consisting of several distinct communities, except in some major threat to the discipline. In each community, the researchers can be linked to a research programme and share a perspective of the discipline which involves epistemological and ontological perspectives. Thus the evolution of the discipline proceeds along different fronts. But the fragmentation of the discipline must not continue until the creation of new disciplines. This will not be favourable to the image of the discipline, especially at times when its value is questioned by society.

The application of Kuhn's model to geography has been criticized. Firstly, revolutions in geography have not been complete because the older paradigms remain with some adherents and in some cases, though slightly modified, reappear some years later. Secondly, Kuhn's model was intended for the physical sciences only, is a positivist model, characterized by the emphasis on the dominance of

disciplinary matrixes 'super-theories' and by the possibility of measuring progress with the application of precise criteria for the verification or falsification of hypotheses. It is not possible to fit this positivist model to recent developments in human geography, where the goal is no longer the development of laws that both explain and predict human spatial behaviour and the spatial organizations of society (like in the positivist approach to geography developed since the 50's), but to give a primordial importance to human subjectivity and agency.

The Lakatos research-programme cannot be applied either to the situation of geography in some countries where physical and human geography have diverged. First in the 50's (when in particular there was a development of physical geography specialisms), secondly since the 70's, when the common methodological base and implicit positivist philosophy that linked physical geography and human geography in the 60's, no longer applied to the then recent developments in human geography. There was a divergence, only the need for an external image led to an attempt to hold them together.

Berdoulay (1981) and Capel (1981) defend the contextual approach, Johnston and Gregory (1984) says that it does not account either for how the discipline acquired its particular image or for how intellectual developments took place within it.

The dominance of individuals was important in the creation of national schools. In recent developments, at least in some countries, these dominant individuals are not apparent and the communities model seems the most appropriate Johnston and Gregory (1984).

Educational ideologies

Concerning the evolution of the curriculum, it is important to indicate the main characteristics of the basic educational ideologies that generate different types of curriculum theory during the period of this study.

According to Skilbeck (1976) there are at least three basic educational ideologies, identifiable in education debates in England, in the USA (and elsewhere):

- 1 - classical humanism;
- 2 - progressivism;
- 3 - reconstructionism.

Classical humanism originated in Greece with Plato. Classical humanism associates traditional culture and values with a small minority group 'the elite'. A classical humanist curriculum would concentrate on cultural heritage. It has shown a remarkable capacity to change and adapt, from mathematics and philosophy, to theology, to classical languages, to literature, music, history and more recently, science, according to changing cultural circumstances. In the twentieth century, the knowledge content of classical humanism is thus not static, but the potential leaders of society are still given a different and separate education from that of the masses, an education that gives access to the best of the cultural heritage.

Like all traditional doctrines, classical humanism sets a standard for the present and future generation of learners defined by their forefathers. Consequently, in education, classical humanism has been associated with clear and firm discipline, high attainment in examinations, continuity between past and present. Education may be active but is always primarily an assimilative process, induction into institutions, acceptance of defined values and standards; initiation into articulated modes of thought and action.

Lawton (1983) argues that the main reason why classical humanism can no longer be acceptable as an ideology in most societies is that it runs directly counter to democratic ideals of social justice and equality of opportunity, and an additional reason is more practical: the relevance of what has traditionally been regarded as the high status forms of cultural heritage is increasingly questionable¹.

Progressivism, or child-centred education is frequently associated with Rousseau's ideas on education that he presented in the imaginary biography of the pupil Émile. For him childhood was an important period in its own right and should not be regarded as preparation for adulthood. Freedom was more important than social order. For Progressivism, more important than transmitting a cultural heritage is the need for the child to discover knowledge for himself and follow his own impulses.

Educational programmes based on child-centred approaches have been devised by Pestalozzi and Froebel. Neil advocated the same approach to education in an extreme form.

A curriculum based on progressivism, would be concerned not with subjects, but with experiences, topics chosen by the pupils and 'discovery'. Knowledge in the form of facts would be regarded as of very little importance, although acquisition of

important concepts and generalizations might be given priority.

Reconstructionism. According to this ideology, education is seen as a way of improving society and thus giving a better opportunity to the individual members of that society. Dewey advocated that experimental methods of science provided the most appropriate approach to social questions and that education for all was, both a desirable aspect of democratic society as well as a means of achieving a better democracy.

The reconstructionist curriculum gives importance to social values - in a democratic society for example, citizenship and social co-operation; knowledge is justified in terms of individuals' social needs, not in terms of custom, or cultural heritage. For these reasons, the traditional school subjects can be replaced by various kinds of integrated studies. Nevertheless, the curriculum organization should take into account the definition of a common culture, which all young people have a right to have access to.

Skilbeck says that besides these three theories something like a technocratic-bureaucratic ideology lies behind much of the current discussion on education. According to Lawton (1983) this ideology has links with utilitarianism.

Utilitarians see the main goal of education as preparing pupils to live in society. The curriculum should provide pupils with the knowledge and skills which will be useful in their future jobs, consequently vocational subjects are highly valued and in other subjects the knowledge and skills useful in work or in life's day-to-day activities. Education is regarded as an instrument of state policy, schools should produce the work-force needed for the economic and social development of the country.

Skilbeck says that he does not suggest that the whole of educational theory is capable of being analysed under one or other of these theories, not that any one thinker or educational institution subscribes to one to the exclusion of the others and that the schools, taken as a whole and over time, probably include elements of the different ways of thinking about education. Nevertheless, these educational theories and the curriculum theories which they originate will help us to understand the evolution of the curriculum and the place of geography on it.

5.2 Geographical Education in Portugal

5.2.1 The period up to 1911

5.2.1.1 Geography at school level

In the 'Estatutos do Collegio Real de Nobres da Corte, e Cidade de Lisboa' dated from 1761 ², the curriculum included the study of History; the History teacher should give a general idea of Chronology, of Geography and of ancient and modern History; and more specially of Portugal and its Possessions...(p. 27) and the teachers of Mathematics should teach in the first year as well as other parts of Mathematics, 'Elements of Geography' and in the third year the 'Complete Geography' (p.29) .

Deusdado was a titular professor of geography, history and philosophy, at the 'Liceu Nacional Central' of Lisboa. For some time he was a member of the 'Conselho Superior de Instrução Pública' (High Council for the Public Instruction). Member of the 'Sociedade de Geografia de Lisboa', he created a periodical about education and teaching 'Revista de Educação e Ensino', well-known at the time. The author writing about geography teaching in 1896 said that geography teaching was not neglected in Portugal, and this could be demonstrated by the textbooks addressed to secondary education published in that country; he quoted one dated from 1826 (by J. P. C. Casado Geraldès) stating that it was a rather well elaborated work and another dated from 1830 (by Frei José da Sacra Família) which was remarkably well done at the time it was written and was adopted in schools until 1860 (Deusdado, 1896, p.5) ^{3, 4}.

In November and December of 1836 there were education reforms at all levels, primary, secondary and higher, which were linked to the institution of a new political system in Portugal: liberalism.

Concerning secondary education, it was stated that the then existing system was unable to contribute to the study of sciences and to the development of arts. Thus, to the improvement of the material civilization of the Country, a need was felt to give Citizens the scientific and technical elements indispensable to economical and social conditions at the time. The creation of one secondary education school 'liceu' in the main town of each administrative territorial division ('capital de distrito') of Portugal (Continent and Overseas) was decreed, except in Lisboa where two

'liceus' were created ⁵ four years later in 1840.

The primary education reform prescribed the study of 'Elementary notions of History, Geography and the Constitution' (beyond the study of the three R's, Civics, Moral, Christian Religion, Drawing and Physical Education). In secondary education reform the study of Geography, Chronology and History was also prescribed. In the reform neither the number of secondary education years, nor the number of years that each discipline should be taught were indicated. Consequently specific syllabuses for any discipline were not ascribed.

In 1844 there was another general reform of the education system ⁶. Primary education was divided into two levels. The first one was prescribed the study of 'Principles of Chorography and Portuguese History' and the second, 'Geography and General History' ⁷. The number of disciplines taught in secondary schools was reduced but the study of History, Chronology and Geography, especially Commercial Geography, was compulsory in all 'liceus' ^{8,9}. The same teacher taught two groups of disciplines; consequently the teacher of History, Chronology and Geography, especially Commercial, taught another group of disciplines including: Oratory, Poetic and Classic Literature, especially the Portuguese one. Neither the number of secondary education years nor the specific number of hours ascribed for teaching each subject and the respective syllabuses was yet established ¹⁰.

In 1860 ¹¹ a new regulation was published for the 'liceus' and they were divided into two categories (first category - Lisboa, Coimbra, Porto, Braga and Évora and second category - the remaining). For the first class ones, five was the number of years established for secondary education. The study of 'Geography and elementary History' was prescribed for the 1st year (one class per week = 2 hours) ¹² and the study of History and Geography especially of Portugal and its Colonies for the 5th year (four classes per week = 8 hours). The study of elementary Mathematics (4th year) included the study of mathematical geography ¹³.

In 1863 ¹⁴ the secondary school curriculum was modified ^{15, 16} and in 1872 ¹⁷ there was a new reform of the secondary education and the curriculum was again altered. Then the number of secondary education years for the 1st class 'liceus' was increased to six, and the study of Geography, Chronology and History was prescribed for the 5th and 6th years (3 and 4 classes per week respectively, each class lasted 1 1/4 h) ¹⁸.

The first printed geography, chronology and history syllabuses were published

in 1872 ¹⁹. They are 'combined' syllabuses where geography appears as an auxiliary to history. In the 5th year after the study of elementary 'notions' of mathematical geography, the study of the geography of Asia and Africa is prescribed, as an introduction to the study of Ancient Oriental History, followed by that of Europe which precedes the study of the history of Ancient Greece and Rome and of the Middle Ages. In the following year the study of the geography of Portugal precedes that of its history. The study of America and Australasia is also prescribed. The syllabuses also include the study of human races and ethnography (in the 5th year) and a summary of the history of geography (in the 6th year). The study in more depth, of mathematical geography is included in mathematics syllabuses.

In 1875 the 'Sociedade de Geografia de Lisboa' - SGL (Geographical Society of Lisboa) was created ²⁰. The aims of the Society according to its statute were: 'o estudo, a discussão, o ensino, as investigações e explorações científicas da geographia nos seus diversos ramos, princípios, relações, descobertas, progressos e aplicações'. It is also stated that the scientific activity of the Society would deal specially with the study and knowledge of facts and documents concerning Portugal ²¹.

At the time of the foundation of the Society several sections including one dealing with the teaching of geography ('Secção de Ensino Geographico') were created ²². This section prepared a report on the teaching of geography at primary and secondary levels which yields evidence of the conceptions of geographical education at that time. This report is dated the 29th November 1876 ^{23,24} and includes in an annex, syllabuses for primary and secondary education levels developed by members of this section.

In the report it is said that to interest the Portuguese people in the development of Overseas Possessions and to develop industry and commerce, there was a need in primary and secondary schools to spread knowledge about the geography of Asia and Africa; not to teach pupils a dry nomenclature, but the real geography which makes them understand the general aspect, the climate, the animals, the vegetation of one region, that is, everything that can explain the work and the future of Man in that region. Thus there was a need to reform geography teaching in primary and secondary schools, following the principles and methods adopted in Russia, Germany, Switzerland, the USA, England, France and at the Geographical Congress, held in Paris, in 1875. The report pointed out that the teaching of geography in Portugal was so bad that they did not want to describe it.

In primary school, geography was only a list of definitions and names to memorize and it was not much better in secondary school.

They recommend to geography teaching in primary education, essentially to change the teaching method, and in secondary education, to separate geography teaching from history teaching (according to the resolutions of the Congress of 1875) and to teach geography for two or three successive years. At both levels, to give special importance to physical geography and subordinate political geography to it. The study of mathematical geography was also advised.

To justify the syllabuses elaborated they pointed out that geography in primary school should start with the study of elementary topography (according to the Congress resolutions). This same method was also advised for the first year of secondary education (to go from the known to the unknown, from the local to the parish, the county, the district, the province, the country, the continent, until the entire world). They also advised the study of simple ordnance survey maps, the use of relief maps and other maps, of copying maps. In secondary education they stated that pupils should understand ordnance survey maps and other maps and make sketches of the regions they studied. They also stressed the importance of establishing the independence of geography from history, but of recognizing the importance of drawing parallels between both syllabuses.

The need for new textbooks and the engagement of the 'Secção de Ensino Geographico' in promoting their development was also pointed out; as well as the need to organize geographical displays or museums, and the advantages of developing geography syllabuses.

The primary and secondary school syllabuses produced by this commission followed the principles quoted above. The secondary school syllabuses for the first year started with the study of general principles of mathematical geography, and very special importance was given to the study of physical geography (to systematic physical geography, to the physical aspects of each continent and of each of their main countries - including the Portuguese, British, French and Dutch colonies). The study of political geography seemed to consist only of the division of each continent into states. In the second year after the study of systematic physical geography, the study of the influence of the climate on man's health (in relation to Portugal and its Colonies) was prescribed; the relationship of Portugal with the countries already studied in the first year; followed by the study of the main elements of political

geography and ethnography which included, for instance, the study of human races; population; nationality; tribe and language; religion; types of government; colonies and colonization; boundaries; capital cities; industries; commerce; communications; customs; factories; arts; monuments; statistical data. This study was to be applied to each state after its physical description. The development given to the study of one state would vary according to its importance, its distance from Portugal and the relationship that it, and its colonies, had with Portugal.

It was stated that special importance should be given to the study of European and African races (in order to acquire knowledge about the people living in Portuguese colonies) as well as to Indian ethnography. The study of the history of geography, especially of the Portuguese discoveries, was also prescribed. Also stressed was the importance of ethnographic studies, these should be done after pupils had acquired the principles of physical geography.

It is said that critical and philosophical study of the powerful and irresistible influences of the Environment, in its widest sense - was the crowning synthesis of geographical science. It was also stated that geography took from other sciences many of its elements, and at the same time rendered great services to history, to politics and to the war arts²⁵ and that geography was an 'independent' science and the basis of universal history. Teachers should find inspiration in the 'big ideas' of the great geographers: Karl Ritter and Malte-Brun.

This report shows evidence that, in Portugal, at that time:

- a) the influence of the Environment was considered to be fundamental to explain human activities;
- b) physical geography predominated over human geography;
- c) anthropological and ethnographical aspects were to be adequately included in geography teaching; (Guerreiro, 1984, p. 64, points out that Ethnographic aspects were usually included in Chorographic or Descriptive Geography works);
- d) the aims assigned to geography teaching were: to interest Portuguese people in the development of Portuguese Possessions in Africa and in Asia;
- e) there was a wish to put in practice the resolutions of the Geographical Congress, held in Paris, in 1875, concerning the teaching of geography.

The main Congress resolutions concerning geography teaching were the following: to start the teaching of geography at all levels with topography instead of beginning with cosmography (the teacher should use ordnance survey maps and organize direct field observation); at secondary level geography teaching should be separated from history teaching, but their syllabuses should be co-ordinated to show the links between both subjects; geography should be taught by specialized teachers; pedagogical museums should be created in secondary schools, where geography would take a fundamental role.

It is important to point out that in the SGL report, quoted above there was no reference to the need for a specialized teacher of geography (in fact this would have been completely impossible at that time, in Portugal).

The conceptions of the committee of the SGL were similar with respect to the general structure of the syllabuses, to the conceptions of the authors of the then official syllabuses, but they introduced the resolutions of the Geographical Congress of 1875 'to start with Topography and not Cosmography' and they added anthropological and ethnological aspects.

Garcia and Soares (1989) analysed textbooks for secondary education published between the 1840's and the 1870's²⁶. They pointed out that the general structure of the textbooks were similar in all of them. They started by elementary notions of Cosmography, followed by the study of Physical Geography (that essentially consisted of definitions and descriptions of the main physical features of each continent). Political Geography was an exhaustive reference to countries of each continent, always presented in the same order: Europe, Asia, Africa, America and Oceania (occupying about one half of the textbook). The authors pointed out if the structure was the same, the development given to each part varied: some textbooks were too simple, others treated the different topics in too great a depth for the level of pupils they were addressed to. They stated that the textbooks were in agreement with the definition of geography, in all of them 'Geography is the science that describes the Earth'.

The textbooks were reprinted several times but two of their authors never introduced alterations in their textbooks (during 36 years in one case, about 20 years in the other); one author introduced minimal ones and only the fourth showed evidence of a preoccupation with updating and ameliorating his textbook.

Two textbooks had bibliographical references. To write their textbooks the

authors found inspiration in older Portuguese textbooks, in a few other Portuguese works, but fundamentally in French, English and German works (both translated in French). The 'Géographie Universelle' of Malte-Brun, the 'Abrégé de Géographie' of A. Balbi, Gaultier (translated into Portuguese) (among the French ones); J. Commings, Moustey, Blok, Murray (among the English ones); Humboldt, Zimmermann (among the German ones). They used them to find definitions, statistical data and a few scientific developments.

During the 1880's there were three reforms in secondary education (1880, 1886 and 1888)²⁷. They introduced not only important alterations to the reform of 1872 and each one of the three reforms also introduced important alterations to the previous reform. This caused, as a consequence, a lack of orientation in secondary education (Carvalho, 1986, p. 618).

The aspects of these reforms which are more important for our study are the following: in 1880, the 5th and 6th years were split in two sections: Arts and Sciences. In all these reforms the teaching of geography was prescribed: linked with that of Cosmography, Universal and Portuguese History in the 3rd and 4th years, in 1880; with History, in the 3rd and 4th years, in 1886; independent from any other discipline, but prescribed only for the 2nd year in 1888. New syllabuses were drawn up in 1880²⁸, 1886 and 1888.

In 1881²⁹ the 'Secção de Ensino Geographico' of the SGL wrote another report on geography teaching regretting that the recommendations of the Section sent in 1877 to the Government had not been adopted in the new secondary school syllabuses. They said that the secondary school syllabuses should be developed in agreement with primary school ones; they regretted that geography stayed linked with history, and that it was a two years course, which was against the opinion of 'pedagogical authorities'.

Concerning textbooks and atlases, they said that it would be convenient to have some adapted to the new syllabuses, but instead they advised the use of some French, Belgian, English and German ones³⁰, promising that the members of the 'Secção de Ensino Geographico' would make efforts to publish new textbooks and atlases. Nevertheless, there were officially approved geography books written by Portuguese authors (and foreign) for each school year.

The syllabuses of 1886 were designed by a Committee to which Deusdado belonged and according to Heleno Junior (1919, p. 123), they represent major

progress in the teaching of geography. (Nevertheless they were encyclopaedic syllabuses. They prescribed too much content to cover in only two years).

Deusdado published in the 'Revista de Educação e Ensino' and in the work quoted above (1896) the syllabuses from 1886³¹. These syllabuses prescribed:

3rd year

Introduction - Definition of geography and its divisions. Orientation and geographical co-ordinates. Earth shape and Earth circles. Maps and globes; geographical terminology.

The Earth - Physical geography of the globe (including mineral productions).

Summary of the geography of the old continent - Physical and political geography of Europe, Asia and Africa; geography of the Ancient World, specially of Greece and Italy.

Modern Portugal - Physical geography of Portugal and financial, economic, administrative, colonial and commercial situation of Portugal. Demography, instruction, statistics; Madeira and Açores: situation, climate and productions; Overseas Provinces: physical description, productions, trade, ethnography, population, administration, culture and colonization.

4th year

Cosmography

Developed study of Europe, Asia, Africa, America and Oceania (physical geography and productions).

Earth as the home of Man - population; races; states; languages; religions; instruction; trade; industry; administrative divisions; capitals; great European powers; types of government; European colonies; communications.

Summary of Portuguese, Spanish and French discoveries. Discoveries of boreal and austral oceans. Great modern expeditions.

The aim was to study all the main geographical aspects in only two school years.

According to Deusdado (1896, p. 5), teaching in Portugal was, in accordance with the evolution of teaching in France, importing from that country the new ideas but adapting them to the Portuguese conditions (the author in his work often quotes L. Drapeyron and E. Levasseur).

A comparison of these syllabuses with the French ones shows that the content at the time of the Portuguese and of the French syllabuses did not present very important differences: the importance given to systematic physical geography, to political geography, which included then the study of a big variety of geographical facts and others not included today in geographical studies; the study of the physical and political aspects of the five continents and specially of Europe, France or Portugal, and their Colonies; the inclusion of aspects of historical geography, of history of geography and of cosmography are common to both countries. Otherwise in the Portuguese syllabuses from 1886 special importance is given to cosmography, probably because among the members of the committee that drew up the syllabuses was the astronomer Francisco Oom; the importance given to the study of economic aspects of the continents is smaller than that given at the time in France; nevertheless in the Portuguese syllabuses of 1880 a more important place was given to the study of the economic aspects of Portugal, than in 1886.

At the time the study of geography in France, was prescribed for six years (four of the 'division de grammaire' and two of the 'division supérieure'). In Portugal only in two, the third and fourth years (see Ferreira, 1980).

Deusdado in his work (1896) says that the growing importance of geography is linked essentially to colonial expansion; the study of geography stimulates in pupils a love of Nature and of the Country; geography contributes to moral and civic education.

According to this author geography is the science of the Earth and studies its external surface features. The study of geography should start in primary school, and this study should not only be a memorization of facts, but an explanation and when possible the observation of each fact (though the memorization of some terms and facts is needed). Pupils should learn geography not only to acquire knowledge but to also develop their minds. In primary school the study of geography should start with a plan of the classroom, followed by a plan of the town where the school is situated. The study of physical geography (he gives an example of Levasseur) should be done with the help of maps. He also points out the need for direct and indirect observation (the use of maps and globes).

With the reform of 1888³² geography became independent from history and its study prescribed only for the 2nd year (Deusdado was against this). The study of history was prescribed for the 3rd year and for the 6th year of the Sciences Section.

The 1889 syllabuses did not include like the previous ones, the study of continents, historical geography, the history of geography and cosmography (the study of cosmography was prescribed for the 6th year of the Sciences Section and included in mathematics). The study of systematic geography (physical and political) then prescribed consisted merely of a list of terms, names and facts. Special importance was given to the study of Portugal and of Portuguese Overseas Provinces.

In 1894 there was another reform of the education system³³ (primary and secondary education). According to Carvalho (1986, p. 631), the author of the reform, Jaime Moriz Professor of the 'Curso Superior de Letras' was in favour of a classical Humanist Curriculum but recognized the importance of sciences and technology in modern society, but in order to give a sound classical humanistic preparation to all pupils he suppressed the two Sections in 5th and 6th years and increased secondary education to seven years (instead of six). (The most important discipline became Latin). Geography was one of the disciplines of the curriculum and its teaching was prescribed for the seven years of secondary education. The study of history was also prescribed for the seven years.

In the syllabuses' instructions³⁴ it said that: 'O ensino da geographia nas primeiras cinco classes deve ministrar ao alumno, partindo da observação da natureza que o rodeia, de representações graphicas escolhidas, do globo e de alguns aparelhos simples, o conhecimento seguro dos factos elementares da geographia astronomica, a intelligencia das cartas geographicas, as noções fundamentaes da geographia physica e uma vista comprehensiva das divisões politicas e da população da terra, com especialidade de Portugal e suas colonias, sem insistir em particularidades de importancia secundaria, sem pretender carregar a memoria do alumno com muitos nomes e dados numericos.'

In the last two classes, mathematical geography (included in mathematics), physical geography (comparative aspects) and ethnographic elements were studied in greater depth. In the first five classes observation and description would prevail and little by little the elementary explanation of geographical phenomena would be given. The theoretical aspects would be studied in the last two years in

accordance with the pupils knowledge and mental development. The inductive method was recommended (starting with observation of the town); observation of the night sky; outdoor teaching; use of atlases and maps. The need for linking the study of geography with other disciplines was also stated (physics, natural history). The history syllabuses followed a chronological order; in the history instructions it was stated that historical description should go along with geographical description, when the stage of historical events could in part explain them.

Geography acquired in this reform an important place in the secondary school curriculum, and the syllabuses in spite of being encyclopaedic, showed evidence of an evolution of the pedagogical ideas concerning the teaching of the discipline. According to this reform, school books should be officially chosen and adopted for five years (its price was also to be fixed by the Government). The adopted books could not be altered during these five years (without official permission) and pupils would not be obliged to buy any others. In geography a book by Raposo Botelho, an army officer, who taught, among other schools, in the Royal Military College and in the 'Liceu Central' was adopted, as well as an atlas by Herman Wagner ³⁵.

In 1905 there was another secondary education reform ³⁶. The number of hours per week of each discipline was reduced, as well as the importance of Latin in the curriculum. Two sections were again created in the 4th and 5th years: Arts and Sciences (the first without any scientific discipline, the second without arts disciplines with the exception of English or German).

About the 1905 reform Heleno Junior (1919, p. 125-126), stated that the place of geography did not improve because in the 'curso geral' it was linked to history and in the 'curso complementar' to cosmography (which had not happened in the previous reform). In relation to the syllabuses he said that they were worse than the German and French ones (which were older). He pointed out some deficiencies in these syllabuses: in the 1st year children were obliged to learn abstract concepts, such as the Earth axis, and they studied the systematic political and economic geography before studying local geography and the geography of Portugal. In the second year they studied Portugal and the Colonies and in the 3rd year the Polar Regions before studying Europe; in the 6th year geography was mixed together with cosmography; and in the 7th year (that, according to the author, was the worse syllabus) with demography, philology, administrative and political sciences and even with religious and military science. Heleno Junior argued that

these syllabuses correspond to an old conception of geography. He regretted that these syllabuses were still partially adopted in 1919.

In 1905 the system of one officially adopted book ended, but the textbooks had to be approved by a Committee appointed by the Government.

In 1887³⁷ Deusdado stated that 'o ensino é principalmente o professor', meaning that one can not have good teaching without a good teacher. He pointed out that partial reforms of secondary education without solving the problem of teacher preparation were not useful. In fact the great majority of geography teachers (like the teachers of many other disciplines) did not have adequate scientific and pedagogical preparation for teaching the discipline. We will see later on, how difficult it was to solve this problem in relation to geography.

Summary of the period up to 1911

Aims

The aims ascribed by Deusdado (1896) for geography teaching have already been mentioned (see p. 107).

Only in the syllabuses from 1895 onwards are these aims expressed. Then it was stated that geography teaching had a real educational value because it develops: the memory mainly of shapes, of colours and of spatial localization; intuition; imagination; the capacity for mental representation of landscapes and places that pupils only knew through oral descriptions or reading, and essentially a clear idea of the features of a country, through the observation of a map. Geography teaching also contributed to the development of a logical way of thinking; a sense of beauty; a patriotic feeling (through the knowledge of the lands and seas discovered by the Portuguese); and finally the idea of human solidarity, showing evidence of the interdependence of different people.

In 1905, it was stated that geographical knowledge should contribute to the general culture of the mind, be useful to life and develop a love of country and of humanity.

It is interesting that some of these aims were repeated in several syllabuses, in different European countries, for almost a whole century (see Ferreira, 1980).

The place of geography in the curriculum

At first geography was essentially an auxiliary to history. It became independent from this discipline in the reform of 1888³⁸.

The political instability and the frequent governmental changes, resulted in successive reforms of the education system, of its curriculum and in the alterations of syllabuses .

In 1888, when the study of geography became independent from history it was only prescribed for one year (the 2nd). Then greater importance was given to history teaching. Nevertheless in 1895 and 1905 the study of geography and history was prescribed for the seven years of secondary education, but the number of hours allocated for history teaching was greater than to geography.

I shall draw attention to the fact that the 1890 British ultimatum asking for the withdrawal of Portuguese military forces from the African territories situated between Angola and Moçambique gave rise to a patriotic reaction and a renewed interest in Portuguese Overseas Possessions. To love and be interested in one's country it is necessary to know it and its glorious past, hence the growing importance of geography and history in the curriculum.

The syllabuses content

The study of elementary notions of mathematical geography was prescribed in all syllabuses except in 1880. Nevertheless in 1880 and 1886 the syllabuses prescribed for the 4th year, a study in depth of cosmography. In the reforms of 1872, 1889 and 1895 this study was included in the mathematics syllabuses.

The elementary study of maps and globes was prescribed in 1872, 1886, 1895 and 1905 but not in 1880 and 1889. In 1895 this study became important. According to the syllabuses from 1905, in the first year, pupils should do on paper and on the blackboard very simple cartographic exercises (the classroom, the school and the town plans) as preparation for the study of maps, prescribed for the 2nd year.

The 1880 and 1889 syllabuses prescribed the learning of terminology for physical geography and those of 1905 of a geographical terminology.

The study of the continents was prescribed in all the syllabuses (except in 1889) as well as that of Portugal. The study of Açores and Madeira is mentioned after 1886 and that of the Portuguese colonies from 1880. This study included the physical and political aspects of these topics. In fact such study was essentially descriptive ('capes and bays') and that concerning Portugal included for example in 1889 the study of the situation, limits, area, relief, rivers, river basins, weather, agricultural regions, geology, vegetation, animals, description of the boundaries, division in provinces, administrative, judicial and ecclesiastical divisions, the state, administration, population, areas of production, imports and exports, roads, railways and telegraphs, state revenue, public instruction, army, navy, judicial administration. Such descriptive geography was taught until 1905. In 1895 and 1905 the study of Portugal included the more characteristic landscapes (nature and man in different regions - 1895 syllabuses).

Also prescribed from 1880 onwards, was the study of physical and political geography of the Globe: physical geography included a description of lands (relief), seas, rivers, lakes, climates... but also mineral, vegetable and animal products; political geography included the study of population, states, capitals, languages, religions, communications and even the education system, resources, art...

It is interesting to point out that since 1895 there appeared in the syllabus the study of Man, separately from the study of vegetation and animals. The three were included in 1905 in the study of 'life' and placed after the study of solid, liquid and gaseous elements of the Earth's surface. The study of Man included aspects previously included under the title of political geography: the population of the Globe and its distribution; races, languages and religions; their geographical distribution; social and political organization and the relationships of Man with Nature.

The study of ethnographical aspects was also prescribed in all syllabuses; the study of aspects of historical geography (specially of Greece and Italy) were mentioned in all syllabuses (except in 1889 and 1895) and the study of aspects of the history of geography and specially of the Portuguese discoveries was also prescribed in all syllabuses (except in 1880 and 1889).

The study of elements of economic geography appeared for the first time in 1905 under this designation. It consisted of the study of agricultural, industrial and mineral products, its areas of production and consumption and world trade.

The study of the local area only appeared in 1895. It included the study of its physical aspects; of its vegetation, animals and Man. It stated: 'The study of the local area and its surroundings, as an example, and as an introduction to geography'.

The researcher has already mentioned that these syllabuses from 1895 onwards were the only ones that had ample instructions for the teacher in an annex.

It is important to point out that there was no general agreement among geographers about the advantages of doing the study of the continents and of Portugal before the study of systematic geography or the opposite³⁹. The study of physical geography usually preceded that of political geography but not always (for example in 1905 in the two first years).

Links with other disciplines

The study of geography was linked to that of history until the reform of 1888. In 1895 references were made to the links of geography with natural history, physics, chemistry but not with history. Nevertheless in the history syllabuses it was said that 'historical description should accompany a geographical description, when geography can explain, in part, historical events'.

In 1905, the 4th and 5th years were dedicated to 'methodical reviews' of geographical content linked with the topics studied, in the same years, in history. Each history lesson should be preceded by a quick revision of the geography of the territory where the historical events took place, including elements of historical geography. It was argued that geography teaching should 'merge' with history teaching; and, in many cases, show evidence of the links between social phenomena and the geographical environment.

Teaching methods and teaching resources

In 1895 it was stated that in the first five years, observation and description would be dominant and little by little the pupil would arrive at an elementary explanation of geographical facts. In the last years pupils would do theoretical studies in accordance with the knowledge previously acquired and their mental

development. It was thus advised that teachers use an inductive method of teaching. Nevertheless in 1905 the curriculum organization suggested that a deductive method be used.

In 1895 the study of the local area was prescribed and consequently a small number of excursions were suggested in order that pupils collected relevant information.

The use of wall-maps and of an atlas was advised in the 1895 instructions, as well as the reading of that part of the chorographic map of Portugal which included the local area. Cartographical exercises on the blackboard and on paper were advised in 1895 and 1905.

Some advice concerning the textbooks has already been mentioned. Only as an example a textbook was examined that was adopted several times for the first years of secondary education and had several editions. The 1907 edition was examined (in accordance with the 1905 syllabuses). It is the 'Curso de Geographia' by J. N. Raposo Botelho. This textbook is an example of geography as no more than an enumeration of descriptive facts. The book has 692 pages and some thousands of names that pupils should know by heart. There are no maps of the continents, of Portugal, of other countries. There are only pictures (for example the 'Place de l'Opéra' in Paris and Trafalgar Square in London are the only ones concerning those respective countries). The lack of maps can nevertheless be explained by the fact that pupils should use an atlas and schools should possess wall-maps.

5.2.1.2 Geographical science⁴⁰

After 1875 there was an improvement in geographical science in Portugal. As previously stated, in this year the Geographical Society of Lisboa was created and in 1876 the 'Comissão Central de Geografia' ('Central Committee of Geography') was set up⁴¹, whose main aim was to develop scientific knowledge about Portugal and specially its Overseas Possessions.

In 1875 a book was published 'Geographia e Estatistica Geral de Portugal e Colonias' ('Geography and Statistics of Portugal, and its Colonies'), by Gerardo A. Pery. The author stated in the introduction that his book was a rigorous description of Portugal, aiming to: contribute to the teaching of its geography and to be a resource for public administration. He stated that he had travelled around

the whole country⁴² studying it and collecting documents, but he pointed out that the statistical data was not always accurate due to the fact that sometimes it was non-existent and in other cases the data available was not reliable.

Nevertheless the author, as Ribeiro (1934, p. 106) points out, shows a scientific concern selecting critically and organizing rationally statistical data and other elements of information and comparing them with similar foreign data⁴³. Reading his book one realizes the variety of sources he obtained and the amount of data he collected⁴⁴. The author included in his book much purely descriptive information, some of it outside the field of geography (as it is seen today). This book was very important for the improvement of the quality of school textbooks, because authors used it as a source of information during the following decades.

In the following years the works of B. Barros Gomes, a forestry engineer, 'Condições florestais de Portugal' (1876), 'Notice sur les arbres forestiers du Portugal' (1878 a)⁴⁵ and specially the 'Cartas Elementares de Portugal' (1878 b) were published. This last work was an Atlas to be used in primary schools.

Barros Gomes' main aim, travelling around the whole country, was to give the best advice on the distribution and the exploitation of the Portuguese forests, but seldom he did not relate this study with that of the natural and social elements of the region (Ribeiro, 1934, p. 104). For Ribeiro, Barros Gomes was the first person in Portugal who undertook studies that could be linked to modern geography. He chose the 'concelho' administrative subdivision of a district, with very old historical origins, adapted to natural conditions, as the elementary unity for the study of Portugal. He studied its relief, climate, vegetation, quality of land, population, taxable capacity, ... He was the first to sketch out with remarkable intelligence one regional division of the country (Lautensach, 1931, p. 374) and, according to Ribeiro (1934, p. 108) his principles were then still considered valid and applicable. He was also the first to demonstrate the relationship between land and settlement ('Foi o primeiro que *pensou em conjunto* os elementos da nossa terra e do nosso povo, atendendo sempre à forma como se encandeiam e se distribuem, pois assim se podem compreender e explicar - preocupações do maior alcance em geografia', Ribeiro, 1934, p. 112).

The Atlas of Barros Gomes according to the author, was addressed to primary school pupils and to Portuguese emigrants and colonists as an element of study, to enable them to remember their country and to attempt to develop it. He stated that his aim was to put in evidence the physical and social conditions of

Portugal, and to arouse a bigger interest in the pupils in historical and geographical knowledge ('conhecimentos histórico-naturais') about Portugal (Barros Gomes, 1878 b, Prefácio). The Atlas has five maps ⁴⁶, all with comments.

In the researcher's opinion the maps and comments are too complex for primary school pupils. Nevertheless it was used during several decades by Portuguese geographers (Girão, quoted from Ribeiro, 1978, p. 226).

At this time the mapping of Portugal was making progress. Pery (1875) stated a map of the country (scale of 1:500,000) had already been published; the chorographic map of Portugal (scale of 1:100,000) was progressing (14 sheets from a total of 37 were already published); there were also some surveys on scales 1: 2,500 and 1: 5,000. The geological map (scale 1:500,000) was almost finished, the classification of collections of rocks and fossils had been done and several reports on geological subjects had already been published.

Meteorological studies were also making progress and there were in Continental Portugal 13 weather stations and 3 in Madeira and the Açores. There were also two astronomical observatories and a third one was being built.

The same author (Pery, 1875) quoted important studies already done in natural sciences, geology, agriculture, forestry, archaeology, industry, and so on, concerning Portugal and its Colonies, which he used to write his book.

The development of cartography, geology, meteorology, natural sciences, agricultural and forestry studies, population studies and so on, made possible the development of geographical science. (Since 1864 a census of the population had also been undertaken in accordance with statistical norms; this became decennial from 1890 onwards).

It is important to point out that the Geographical Society of Lisboa and the 'Comissão Central de Geografia' ('Central Committee of Geography') had played an important role in promoting expeditions in Africa. To these expeditions were ascribed scientific and geographical aims, but in fact the main goal was to guarantee the rights over African territories that historically were deemed to belong to Portugal. These expeditions also had economic aims (Marques, 1981) ⁴⁷.

The Geographical Society of Lisboa organized in 1881, a scientific expedition to the highest mountain of Portugal - Serra da Estrela. This expedition had the participation of about one hundred people organized in 13 scientific sections:

Agriculture and Forestry, Anthropology, Chemistry, Geology, Hydrology, Photography, Zoology, Zoo-Technology, Ethnography, Medicine, Archaeology, Meteorology and Botany. A topographical map of the region was drawn up; a place was chosen for a weather station and six scientific reports from 5 scientific sections were published (see Daveau, 1981 a).

According to Daveau (1981 a) this expedition (which was not followed by any other), is the one exception in the activities of the Geographical Society that has always been much more interested in Overseas expansion than in its own Country.

The Geographical Society of Lisboa sent representatives to the International Congresses of Geography and to the International Congresses of Commercial Geography. Other Portuguese also participated in these Congresses. The number of Portuguese participants and the importance of their contribution varied from Congress to Congress. Luciano Cordeiro who had a very important role in the development of the SGL and was a member of the 'Secção de Ensino Geográfico' was one the representatives of the Society at the Congress held in Paris in 1889. One of the questions discussed then in the 'Didactic group' concerned the need for a specific Professor of Geography at University level. The participants agreed that such a chair should be established (Santa Rita, 1938).

J. Batalha Reis, agronomist, diplomat, member of the SGL, who had an important role in the defense of Portuguese rights over African territories, was very interested in geography and in 1895 presented a paper at the Sixth International Geographical Congress held in London in 1895, paper entitled 'On the definition of Geography as a Science and on the conception and description of the Earth as an Organism'. He stated that 'Geography is the description of the Earth, that is to say the description of the different beings in relation to Earth; therefore, the description of the place which they occupy on it, or their occurrence and distribution thereon'. The author pointed out that in order that geography become a science there was a need 'to conceive and present its subject matter as a unity, an individuality, an organic whole'; that is 'to ascertain facts through observations and experiments' and 'to bring them into unity, to fuse them into a theory expressing the organic unity of the whole'. Reis' main objective was to express the need for a 'Theory of Geography' in order to become a science (Reis, 1896).

The facts quoted above: the interest in geographical studies (due specially to colonial ambitions); the creation of the SGL and of the 'Comissão Central de Geografia' (Central Committee of Geography); the development of cartography

and of several sciences which could give important elements to geographical studies; the works of Pery and specially of Barros Gomes; the growing knowledge of Portugal and of its Colonies; the participation in International Congresses; the reflections of Batalha Reis; all were favourable for the development of geographical science, but for the development of geographical education at school level there was a need for effective teacher preparation in geography.

In 1859 the 'Curso Superior de Letras' (The 'Arts Higher Education Course') was created in Lisboa, with five chairs: History, Ancient and Modern Literature, Philosophical Universal History ('História Universal Filosófica') and Transcendental Philosophy. It was a two year course. Only with the reform of this course in 1901⁴⁸ was a chair of Geography created⁴⁹. To this chair, Silva Telles was appointed in 1904.

The 'Curso Superior de Letras'⁵⁰ had five kind of courses: the 3rd one prepared for the teaching in secondary education of several disciplines, including geography. In this 3rd course the study of geography was prescribed in the first and second years (2 hours per week), and in the fourth year there were also lectures in geography (lectures were 1 1/2 hour per week in duration). In the 3rd year the programme included the study of pedagogy and its history and in the fourth year besides the lectures there was an initiation to secondary education teaching that included practical exercises in the pedagogy of secondary teaching and in the study of the history of pedagogy (2 exercises per week each - 1 1/2 hour duration). It was stated that the study of the historical parts of geography, had as one of its main topics, the Portuguese discoveries, and in geography beyond the exposition of 'doctrines', there would be exercises in cartography, analysis of cartographic documents and others which concerned the history of geography.

This was an important step in order to give an adequate preparation to geography teachers.

On the 5th October 1910 the Monarchy was abolished and the Republic was established. The new government had many basic problems to solve: among them those concerning education. In 1911 the creation of the University of Lisboa and Porto (on 22nd March) was decreed, and in the same year (on the 9th May) the 'Faculdades de Letras' ('Faculties of Arts') of Lisboa and Coimbra (that of Lisboa replaced the 'Curso Superior de Letras') were created. These faculties had five sections, one of them of Historical and Geographical Sciences.

If we analyse the evolution of geographical science and of geography teaching in Portugal before the institutionalization of the discipline at academic level, we can reach among others, the following conclusions:

- a) The growing interest in geographical studies and in geography teaching appeared mainly in the second half of the 19th century, due essentially to the need to guarantee Portuguese rights in Overseas territories, specially African ones.

In the 1870's Great Britain had a plan for colonial expansion, Germany and France tried to fight against the British ambitions in African territories. The international conference held in Berlin (1884-85) (the Berlin Conference on Africa) tried to define a new colonial public law. According to the Conference's General Act, the effective occupation of colonial territories would replace historical rights. This Act put in danger the rights of the Portuguese over vast areas of the African continent and led to the organizing of expeditions and to occupying territories even minimally.

The ultimatum sent by Great Britain to Portugal on 11th January 1890 asking for the withdrawal of Portuguese military forces from the territories situated between Angola and Moçambique put an end to the Portuguese pretensions to these territories, but the treaty with Great Britain from June 1891 left Portugal with vast African areas which it was necessary to colonize effectively (Marques, 1981).

To interest the Portuguese people in their Colonial Possessions, to administer these territories, to develop their commerce and industry, it was necessary for the Portuguese to know the geography of these territories

The SGL and the 'Comissão Central de Geografia' ('Central Committee of Geography') were created in the 1870's. There is evidence that their efforts concentrated mainly on the Colonies, but the geography of Portugal specially at the beginning was not neglected.

Geography teaching was deemed to be important. The 'Secção de Ensino Geographico' contributed to the improvement of geography teaching at different levels.

To show evidence of the importance of the colonial problem, among those who had a more important role in the development of geography teaching,

we can point out, for example, Deusdado (1890) wrote a Plan for a Portuguese Colonial School after the British ultimatum. One of the disciplines of the Colonial School according to his plan would be Colonial Geography; Silva Telles promoted the first National Colonial Congress, organized by the SGL which was held in 1901, he also belonged to the Committee which organized the second (1924) and the third (1930) Congresses (Santa Rita, 1934); Batalha Reis in 1878 signed a proposal to be sent to the Portuguese Government about the need for creating a Colonial School (it was created only 28 years later), he was a member of the Portuguese National Committee for the Exploration and Civilization of Africa and between 1877 and 1891 he defended Portuguese rights over African territories,... (Machado, 1941). Some members of the 'Secção de Ensino Geographico' played an important role in Colonial affairs, such as Luciano Cordeiro who was one of the first members of this Section.

- b) The teaching of geography at primary and secondary levels precedes its institutionalization at academic level. The lack of an effective scientific and pedagogical preparation for geography teachers was the main cause for the poor state of geography teaching at school level and for the bad quality of many textbooks.
- c) First a simple auxiliary to history, geography became 'independent'. This separation was acclaimed by those more interested in developing geography teaching.
- d) Frequent political changes which occurred during this period led to successive reforms of primary and secondary education. The importance of different disciplines in secondary school curriculum varied according to the educational ideologies of the author of the reform. This was more evident in relation to scientific disciplines, but also influenced others.
- e) The place of geography in the curriculum varied with the different reforms and reached a minimum in 1888 (when the discipline became independent from history) and a maximum (as well as history) in 1894 (after the British ultimatum).
- f) The different syllabuses corresponded to different conceptions of teaching geography. They were all 'encyclopaedic' and there was always too much content to cover in the time ascribed to geography teaching. The researcher

believes that the 1894 syllabuses correspond to a real progress in relation to the previous ones. But without good teachers and good textbooks, the role of syllabuses is minimized and this was the case.

- g) Influence is evident of French, Belgium, German and English geographers on the geography teaching conceptions in Portugal (among the most influential are Levasseur and Drapeyron). Books from these countries were recommended and approved for geography teaching at secondary and even primary levels.
- h) The developments in geographical science were due to people whose main activity was in another field. A forestry engineer - Barros Gomes; an agronomist, historian, diplomat, Batalha Reis; a Bachelor of Medicine, Silva Telles, among those quoted above. But a generalized conception of geography as a science and as a school subject did not exist at the time.
- i) The improvement in knowledge about the geography of Portugal was effective with the development of the mapping of the territory and of other scientific knowledge concerning Portugal.

5.2.2 The period 1911-1973

5.2.2.1 Geography at academic level

The institutional context

As was stated above the 'Faculdades de Letras' ('Faculties of Arts') from the Universities of Lisboa and Coimbra were created on 9th May 1911. They had five sections, one of them of Historical and Geographical sciences. A curriculum was prescribed for each section ⁵¹. For the section of Historical and Geographical Sciences the curriculum included the following geographical disciplines: Systematic Geography and Physical Geography (in the Faculty of Sciences) for the first year; Geography of Portugal and Colonies for the second year; Political and Economic Geography for the 3rd year. There were thus four geographical disciplines out of a total of 25 disciplines (these included ethnology; practical cartography, but essentially historical disciplines, philosophy, philology, Portuguese literature). The place of geography in the curriculum was hence much less important than history.

The courses were to include lectures, practical work and scientific research exercises. In the course on Geography of Portugal, at least one scientific excursion, with the purpose of doing regional studies of the country, was to be organized each year.

Students would study all the disciplines in order to be admitted for a Bachelor's degree which included written tests and oral tests. In the section of Historical and Geographical Sciences the written test included 6 historical disciplines and political and Economic Geography. The oral test 5 historical disciplines, Systematic Geography and Geography of Portugal and Colonies ⁵². The importance of geography was still less than that of history .

On the 21st May 1911, 'Escolas Normais Superiores' were created as annexes to the Faculties of Arts and Sciences. Their aim was: to promote high pedagogical culture and the qualification needed for secondary and primary teaching, and for admission to the inspectorate. The courses lasted two years: one of pedagogical preparation and the second of initiation to pedagogical practice. For the future secondary school (liceus) teachers the course included in the first year: Pedagogy (with exercises in experimental pedagogy); History of Pedagogy; Child Psychology; Science Theory; General Methodology of 'mind' sciences ('sciências

do espírito'); Organization and comparative legislation of secondary education; Hygiene and specially school hygiene; Moral; High Civics Instruction. In the second year, special methodology of the disciplines corresponding to a Bachelor's degree and pedagogical practice in a secondary school ('liceu central'). At the end, the future teacher would sit an examination to evaluate his pedagogical aptitude.

This was another important step to have qualified geography teachers, adequately prepared scientifically and pedagogically.

Nevertheless, in the Faculties of Arts the importance of geography was much less than that of history. Heleno Junior (1919) regretted this fact.

Pereira de Sousa (1924) also regretted that geography students were only obliged to attend the Physical Geography course at the Faculty of Sciences, not to pass an examination, and the fact they were not able to understand part of the course because they had not acquired the necessary scientific preparation in secondary schools (they came from the Arts section).

The reform of studies in 1926 maintained geography linked to history and only in 1930 did 'Geographical Sciences' become independent. The course had then four years: in the first two years students had only courses in the Faculty of Sciences (they did not study any geography during these first two years) and in the last two years in the Faculty of Arts. The consequences were that many students during the first two years gave up the intention of doing a geography course and took the option of doing sciences (Schwalback, 1937; Amaral, 1983).

In fact the number of geography students until the 70's was very small and smaller still were the number of those who completed the course. In Coimbra the first students completed the Historical and Geographical Sciences course in 1915/16. They were only seven and in the following year only one. Between 1918 and 1930 only 45 students finished the course (average 3.75 per year) and between 1930 and 1933, 33 students completed it. After geography had become independent from history in 1930, the number of students who completed the geography course was very small; in the period between 1935/36 and 1955/56, 23 students (average 1.2 per year), between 1956/57 and 1961/62, 42 students (Rebelo, 1986). The same happened in Lisboa, where the number of students was always very small.

There was much time left for University teachers to do research work but the consequences were that the number of university geography teachers did not

increase and there was a growing shortage of geography teachers (with adequate scientific preparation) for secondary education level.

In 1957 there was another reform of the Faculties of Arts to give a more sound scientific preparation to the graduates and the duration of the course was increased from four to five years. Then the geography course was much altered. In the first and second years students had disciplines in the Faculty of Sciences and Arts (not only in the Faculty of Sciences as before). The last three years only in the Faculty of Arts, where besides geography, a two years course of ethnology and three historical disciplines were compulsory. There were also three optional disciplines (usually students chose historical ones also).

The researcher did her geography course following the curriculum⁵³ instituted by the 1957 reform. The disciplines from the Faculty of Sciences were not adapted to the needs of a future geographer and they did not take into account the lack of previous knowledge of geography students in comparison with students from other courses (namely in geology). Very little fieldwork was done. In the Faculty of Arts the geography disciplines were Physical Geography (a two years course); Human Geography (a two years course); Regional Geography; Geography of Portugal; Geography of the Tropical Regions (a two years course); Applied Geography and a research seminar. To complete the Geography course students were to present a dissertation (usually a monograph).

There were then in Lisboa (in the middle 60's) one geography Professor and four lecturers. The researcher specially remembers O. Ribeiro who introduced us to Human Geography and during his course showed evidence of a great admiration for P. Vidal de la Blache and particularly for P. Gourou's geographical concepts and works. He 'took us' from rural Europe to the colonization of Canada, to the Pre-Colombian civilizations, to the introduction of new crops in Africa, to Monsoon Asia and the civilizations of rice, to China and the bamboo civilization, to the Polynesian navigations. He 'took us' from Pre-history to the XXth century traditional rural Europe. I. Amaral taught us Physical Geography and the Geography of Tropical Regions, organizing carefully his lectures and exposing the old and new physical geography theories. Unfortunately, the aims and the organization of other geography courses were not so evident.

The ethnology course (J. Dias was then the Professor) and some historical ones completed our 'cultural geography' and gave us some bases to elaborate a classical regional monograph. We did not do much fieldwork, but every year an

annual excursion was organized and again I remember O. Ribeiro describing and explaining 'his' Central Portugal. In relation to geographical techniques we were introduced specially to map reading and interpretation.

Due to the length of the course and the obligation to present a dissertation (the Faculty of Sciences courses had only four years and no final dissertation) the number of geography students did not increase appreciably. With respect to Coimbra, Rebelo (1986) says that until 1967 only 12 students finished the course (in five school-years). The number of students was small and many left the Faculty and started teaching at secondary level without presenting the final dissertation (too demanding in time and money).

In 1968 there was a new reform and the degree of 'Bacharel' obtained at the end of a three years course was created, but the degree of 'Licenciado' obtained at the end of a five years course and the presentation of a dissertation was maintained. The curriculum was only slightly altered. The cause of this reform was again the shortage of teachers for secondary education⁵⁴. Since then the number of students has increased continuously but the proportion of those who presented the final dissertation was very small, and many even left the Faculty at the end of the first three years or without completing the five years course. The need for a new reform of the Faculty of Arts courses was then evident, but this only happened after 1974.

Gaspar (1985) links these reforms with broader transformations in Portuguese society: in relation to the 1911 reform he points out that 'the important role of the colonies in the ideology and policies of First Republic is reflected in one of the few compulsory courses: 'The geography of Portugal and its colonies' (Gaspar, 1985, p. 316).

'In 1930 geography became an independent university degree in the early years of fascism, when the idea was that the subject should contribute to the renovation of Portugal, Geography was to play a "scientific" role in this process, whilst the role of history was viewed as being more "ideological". The name of the subject changed to *ciências geográficas* (geographical sciences) and great weight was placed upon disciplines such as physics, mathematics, mathematical geography, mineralogy and geology. The colonial orientation was also strengthened and given greater autonomy with courses such as "Portuguese colonial geography" and "History of the discoveries and Portuguese colonization". At the same time, a one-semester course in human geography (*Geografia Humana*) appeared for the first time. The imbalance between the interests and qualifications of the teaching

staff and the heterogeneity of the courses made this reform a great failure...’.

According to the same author (idem, p. 317), the 1957 reform linked to ‘the so-called “modernization of Portugal” also gave a new role to geography and many other subjects. Geography was no longer to be an “applied” or “scientific” subject but was to have a more ideological role, mainly because of its importance in the curricula of secondary schools. Universities were to become institutions where geographers were to be trained as teachers of geography, and in university geography a balance can be observed between earth, biological and historical sciences on one side, and physical, human and regional geography, together with anthropology, on the other. The course “Colonial geography” disappeared, being replaced by *Geografia das Regiões Tropicais* (“The geography of tropical regions”) which assumed an important role in the curriculum’.

As a matter of fact, as has been shown, geography always had an ideological role, specially concerning a ‘colonial ideology’ linked to the patriotic mission of carrying on the greatest Portuguese ‘deed of valour’: the XV and XVI century discoveries.

Faculties of Arts have always been institutions which gave scientific preparation to secondary school teachers (This was the future profession of the big majority of their students), and with the institution of the ‘Curso de Ciências Pedagógicas’ (see p. 156) they were also in charge of giving them a theoretical pedagogical training.

As was also shown, reforms at university and school levels are linked to political, economic and social changes.

Geographical science

In the Faculty of Arts of Lisboa, the first geography professor was Silva Telles. Silva Telles was a Bachelor of Medicine who also studied Anthropology. His first geographical works concerned the possibility of European people settling in tropical areas and included notions of geography, anthropology and tropical hygiene. In 1902, when the Tropical Medicine School was created he started to teach a discipline there that he called ‘Hygiene and Climatology’ and later on ‘Climatology and Medical Geography’. He became professor of the ‘Curso Superior de Letras’ in 1904.

In 1908, he presented a paper in the IXth International Congress of Geography (held in Geneva), with the title of 'L'enseignement supérieur de la Géographie' where he defended the teaching of geography as an autonomous science. 'Elle a ses faits et ses lois. Son corps de doctrines provient de sources diverses: les sciences mathématiques, physico-chimiques, naturelles et sociales. Cette autonomie exige, au point de vue didactique et pédagogique, une indépendance complète de l'histoire' (Telles, 1908). An autonomous science, in accordance with the naturalistic concept (then widely accepted, specially in the German science), a synthetic and integrating approach in studying different geographical aspects (see Ribeiro, 1976).

For Ribeiro (1976, p. 19), Silva Telles' most original work is about the scientific concept of geography, published in 1915 'O conceito científico de Geografia' where he defends again a naturalistic or synthetic concept of geography as a science. For the author the 'central theory' of geography is the knowledge of a systematic synthesis and of the local and regional syntheses. This work is a strong reaction against mainly descriptive geography and the lack of definition of its more exact limits in relation to other sciences having links with geography (Ribeiro, 1976, p. 19).

In 1924 he presented a report to the International Colonial Institute session held in Rome with the title 'Rapport sur la Climatologie Intertropicale et le Climat des Colonies Portugaises' which according to Ribeiro (1976, p. 24) is his greatest and most original work in climatology. Firstly he gave a classification of these climates, secondly he wrote about the climate of the Portuguese colonies (using the documents then available), and then about the possibilities of settlement of European colonists in areas with different intertropical climates.

The same author (Ribeiro, 1976) points out his originality in analysing the regional Portuguese landscapes ⁵⁵ and the aim of showing evidence of the geographical autonomy of Portugal ⁵⁶.

Santa Rita (1934) says that Silva Telles' written works did not reflect his influence and social value. His importance in the development of geography had been fundamentally as a professor exerting an enormous influence over his students; Ribeiro (1976) says that he introduced in geography teaching a rigorous scientific method and, though his works have an unequal importance, they show his talent as geographer sometimes.

Silva Telles had no initial preparation in geography, travelling and reading

he developed his geographical knowledge and transmitted a scientific conception of geography to his students, but he was not a researcher, he was essentially a teacher. Silva Telles also taught Economic Geography at the 'Escola Superior de Comércio'; he was for 12 years General Secretary of the SGL, Vice-Rector and Rector of the University of Lisboa, Member of the Parliament and for a short time Minister of Public Instruction. In the section of this thesis concerning geography teaching at school level, his role for the development of geographical education in Portugal will be mentioned.

According to Ribeiro (1976), L. Schwalbach, S. Telles' disciple who became his collaborator, neither had the teaching qualities, nor the research qualities of Silva Telles, though his bibliography shows a vast field of interests. (In fact his works are written in a difficult language, not very adequate for scientific works, trying to show an erudition sometimes inappropriate for the topic of the work).

In 1943, O. Ribeiro occupied the chair left vacant since 1930 after the death of Silva Telles .

In Coimbra the first professor of Geography was A. Ferraz de Carvalho. He was a geologist, who started teaching at the University of Coimbra before its reform. First he taught in the Faculty of Philosophy (which after the reform became the Faculty of Sciences) and he also initiated the study of geography in the Faculty of Arts.

Girão says Ferraz de Carvalho went in 1912 on a visit to the most notable scientific centres in foreign countries to study the organization of geology and geography teaching (see Girão and Morais, 1955). He worked in Portugal, in the Portuguese Atlantic Islands and in the Overseas Provinces⁵⁷. His main works concerned geophysical and geological aspects but he also published works on geography. Girão, who was one of his students, collected and published the first Ferraz de Carvalho lectures on Systematic Geography in 1914. At the time there was nothing else about this subject in Portuguese and when in 1915 he published his lectures on the Physical Geography of Portugal, there was in Portuguese only the 'Notícia sobre a Carta Hipsométrica de Portugal' from P. Choffat (1907), the 'Introdução Geográfica' from Silva Telles (1908) and the works that we have already quoted from G. Pery and Barros Gomes (the work of Barros Gomes 'Cartas elementares de Portugal' was then forgotten). (See Girão and Morais, 1955, p. 3).

Rebelo (1983 a) says that the most important of Ferraz de Carvalho's

geographical works were three articles 'Portugal' (1930 a), published in an encyclopaedia where the author gave the first good summary of the geography of our country; the 'Problemas da Orogenia Portuguesa - O Relevo da Orla Sudoeste do Planalto da Beira-Alta', (1930 b); and the 'Contribuições para o Estudo da Geografia em Portugal' (1948), essentially a topographic and geological description of Portugal. Thus he particularly made an important contribution to the development of physical geography studies in Coimbra.

His disciple A. Girão, who taught geography in the same university in 1918, was a notable geographer who presented in 1922, the first doctoral thesis in geography in Portugal, 'A Bacia do Vouga. Estudo Geográfico', which was also the first geographical monograph presented in Portugal. Though the choice of the area of study, a river basin, was criticized by Lautensach (1948), because it did not correspond to a natural region ⁵⁸, the same author pointed out that this was the first time that a part of the Portuguese territory was the object of a scientific geographical study. In 1925 Girão presented another monograph about a Portuguese town, 'Viseu. Estudo de uma aglomeração urbana' ⁵⁹, which was for about 20 years the only urban geography monograph written by a Portuguese author (Amaral, 1983, p. 69). This same author (Amaral, 1983, p. 69) pointed out that Girão was an initiator in many fields, including the importance given to fieldwork. Some of his work was important for the improvement of geography teaching at school level namely his Geography of Portugal (1941 a). (The author in the introduction quotes the works of Barros Gomes, hoping that his work could also be useful to the pupils, emigrants and colonizers); and an Atlas of Portugal (1941 b), with 40 maps ⁶⁰. The geographical scientific preparation he gave for future teachers of geography was equally important for the development of geography teaching.

Girão had an excellent preparation in history, and among his works were some about historical subjects. In many of his geographical works he also gave importance to historical evolution in order to explain the geographical features of the present time. His importance in the development of geographical science in Portugal is recognized by O. Ribeiro. This author says that this science had in Portugal, three founders: Barros Gomes, Silva Telles and A. Girão. The last one, disciple of geologists and historians, was initiated into geographical science by reading and doing fieldwork (Ribeiro, 1970 a, p. 5-6).

In 1950 Girão initiated the publication of a geographical magazine 'Boletim do Centro de Estudos Geográficos', where he published a large number of articles.

(However, due to several difficulties this magazine stopped being published in 1967).

In one of his articles published in 1952 '«Quo Vadis», Geografia Humana?' Girão drew attention to the state of geographical science in various European countries, particularly in France, noting the uncertainty which was often observed in the concept, the methods and the purpose of research in geography. Particularly in human geography he was against the conceptions of A. Cholley 'la géographie est essentiellement homocentrique'; of Le Lannou 'la géographie est la connaissance de l'homme considéré comme habitant de la planète'; of Max Sorre 'prendre comme centre d'intérêt le groupe' and particularly of A. Gibert who considered geography 'une attitude d'esprit, une méthode, un point de vue'. For Girão the definition of geography from Vidal de la Blache 'la géographie est la science des lieux, non celle des hommes' should not be forgotten (a definition that came from the geography humanists of the 17th century). Man is not just a simple 'fact' but is mainly an important geographical 'factor'. He pointed out the need to consider, side by side, two orders of principles, which often were not distinct in the landscape: the physical or 'natural' and the 'human', and consequently a natural or 'physical' geography and an artificial or 'human' geography.

At this time geography in France was facing a crisis in regional geography and increasing specialization. According to Claval (1984, p. 29), 'although the 50's and 60's were years of intense work and thought, the results did not measure up to the effort expended upon them. Geography had developed in a material sense but without anyone being able to define its boundaries and understand completely the uneasiness which oppressed it'. Girão felt this problem and the need to return to the best sources: geography is 'la science des lieux'; human geography studies the Earth as modified by human activity.

In 1932, V. Taborda presented in Coimbra a doctoral thesis which was a regional monograph about the NE part of Portugal 'Alto Trás-os-Montes. Estudo Geográfico'. In the introduction to his work the author says that it was then almost impossible to do a definitive regional geography in Portugal because there was not enough climatic data, rivers, vegetation, evolution of the agriculture, of the population... were not yet studied and the statistical data available was insufficient. So he prepared questionnaires and did fieldwork for several months in order to get adequate information. Nevertheless, according to Lautensach his work was one of the best regional studies done in Portugal, specially the human part based on

fieldwork.

O. Ribeiro, the most well-known Portuguese geographer, has written not only about his scientific and academic life, but also about those who influenced the evolution of his scientific thought and those who became his disciples.

History of the evolution of geographical thought in Portugal has not yet been done, but reading and analysing Ribeiro's writings it is possible not only to have an almost complete image of the evolution of geographical science in Portugal during more than fifty years, but excellent insights into other sciences and a picture of academic life. I hope that soon an experienced geographer, among those who worked with Ribeiro for many years, will do a critical analysis of his works, which would be of inestimable value to other geographical studies and would give a panorama of Portuguese scientific activity during about half a century and of the influence exerted on its evolution by external and internal factors.

Ribeiro, born in 1911, took the course of Historical and Geographical Sciences at the Faculty of Arts of Lisboa. Silva Telles was his professor during one year (he died at the end of this year). Ribeiro praised Silva Telles' theoretical geography teaching (see p. 127) but he stated what students learned in his courses could not be applied to field observation. Geography teaching at the Faculty of Arts was then merely theoretical and Ribeiro states he never made an excursion nor saw a large scale map during the course. At the Faculty of Sciences the teaching was better, with practical work and outdoor visits.

Ribeiro acquired a humanistic education and expresses admiration, among others, for the historian, Manuel Ramos, and for the ethnographer José Leite de Vasconcellos (the first to do scientific and rigorous fieldwork in Portugal). (See Guerreiro, 1984). For his humanistic and naturalistic preparation the reading of a large number of works in many domains was important too.

To complete his preparation in geology, he followed a course in the 'Instituto Superior Técnico'. The professor was E. Fleury who organized excursions every week which were very important to Ribeiro's learning field observation. He had the opportunity to visit all the Atlantic Portuguese Overseas Provinces and the Island of Madeira in 1934. It was his first contact with two of his main areas of study: the Atlantic islands and tropical areas. The other, the main area of study was Portugal, where the Mediterranean and the Atlantic influences interweave and give to Portuguese territory a dual aspect (Ribeiro, 1945).

In 1935 Ribeiro presented a doctoral thesis, a regional monograph 'A Arrábida - Esboço Geográfico', which according to Lautensach was well written but did not present the rigour of observation and of method that other later works would show. His geographical training was completed in Paris, where he followed among others, the courses of Physical Geography of E. De Martonne and of Human Geography of A. Demangeon.

In 1941 he started to teach at the University of Coimbra where he gave a strong impulse to physical geography, giving importance to fieldwork and mapwork in his teaching and in research works (see Ribeiro, 1970 a) and in the 1942/43 school year he started to teach at the Faculty of Arts of Lisboa.

In 1943 in Lisboa the 'Centro de Estudos Geográficos' ('Geographical Studies Centre') was created which up to the present has had a primordial role in the development of geographical research in Portugal. Another identical centre had been created in Coimbra in 1942. The Lisboa centre was the basis for the organization of the XVIth Geographical Congress held in Lisboa in 1949.

In 1949 Ribeiro had already 81 works published, among them 'Portugal, o Mediterrâneo e o Atlântico. Estudo geográfico' (1945), one of the best known of his works (the 5th edition appeared in 1987). It is the first synthesis elaborated by the author.

For the IGU Congress he elaborated two excursion-guides: 'Le Portugal Central' and 'L'Ile de Madère. Étude géographique'. Central Portugal had been his main area of research and if a general knowledge of the country made possible a synthesis of its geomorphological problems, it was Central Portugal that furnished the essential connections and the hypotheses which were the bases of his work (Ribeiro, 1970 a). The study of Madeira was the first monographic study of an Atlantic Portuguese Island.

It is interesting to indicate that in the IGU Congress - 1949, besides these two excursion-guides, Ribeiro presented 6 papers: one to the Cartography section; one to the Physical Geography section; three to the Human and Economic Geography section and one to the VIth section, on methodology ⁶¹.

He became the 'geographer of Portugal' (Ribeiro, 1970 a, p. 32) before enlarging his area of study mainly to the Atlantic Islands; the Overseas Portuguese Provinces (Portuguese Guiné, Portuguese India, Angola and Moçambique), Brasil

and so on, which gave him the possibility of writing comparative studies on human geography which included three continents: Asia, Africa and America (Amaral, 1984).

The German H. Lautensach, the French E. de Martonne and P. Birot and others did research in Portugal. Ribeiro collaborated with them. The contribution of H. Lautensach and of P. Birot to the knowledge of Portugal as well as to the development of geographical research was very important. (See Ribeiro, 1971, 1973, 1985). He also collaborated with geologists (Portuguese and Spanish), ethnologists and historians.

His first collaborators in the 'Centro de Estudos Geográficos' had an initial formation other than geography (M. Feio an engineer, interested in geology and paleontology, who presented a doctoral thesis on geomorphology; F. Tenreiro, with a Colonial School course, who produced a thesis with concepts and methods from sciences other than geography, namely from ethnology and sociology). For the organization of the IGU Congress he also asked the collaboration of researchers from different disciplines.

In the decades following the IGU Congress, until now, Ribeiro has gone on publishing his works which now exceed 300. He has worked and published works on physical, human (rural, urban, cultural), regional and historical geography and in other disciplines, namely, he did geological surveys, ethnological introductions and historical articles (Ribeiro, 1983).

It is important to enumerate two other of his initiatives: (1) the creation of the magazine 'Finisterra', which made possible the publication of geographical research articles, until then dispersed in several magazines and (2) the organization, in 1967, of an International Geographical Meeting. (See Ribeiro, 1968).

It is important for this thesis to analyse Ribeiro's geographical thought and his influence on his disciples and consequently on school geography.

In an article entitled 'Conception et Interprétation en Géographie Humaine' (1961-1962) (which is a translation into French of a work published in 1960 'Atitude e Explicação em Geografia Humana' and for which an abstract is written in English) the author states: 'Human geography is torn between two tendencies: the ecological tendency examines man in interrelation with the natural environment, the chorological tendency places the accent on the changes which man has produced in the

landscape. Man, in this sense, is a genuine geographic factor. There are two extreme positions: one tends to point out the role of determinism of the natural environment, the other seeks «the key to geographical explanation» in the culture of man..., the author while according an essential place to culture in geographical interpretation, draws attention to the fact that culture itself is explained in large part by its genetic environment...'

For the author 'research into ecological correlations is not the essence of human geography. Human geography ought to remain «the description and interpretation» of the human elements of the landscape, of regions, and of continents. Its fundamental method remains observation. The interpretation, with delicate gradations as in all the social sciences, ought to be based simultaneously on the «influences of the environment» and on the resources of the culture of a given people. It thereby reflects both determinism and the freedom of choice in all human behaviour'.

In Ribeiro's human geography works, the importance of physical conditions is always present, as well as the role of History and of 'Man as a genuine geographic factor'.

Claval (1976, p. 103) says about that article 'Conception et Interprétation en Géographie Humaine': 'Nulle part on ne trouve mieux décrits les méthodes et les problèmes de la géographie classique. Nulle part on ne comprend mieux son intérêt profond. Les exemples qu'il développe montrent comment les paysages culturels sont faits d'ambiance et comment des ambiances variées se fondent en certaines zones privilégiées jusqu'au point où l'on se demande ce que permet de classer tel ou tel paysage dans tel ou tel ensemble... Au-delà,... il en arrive à cette question qu'on ne peut éviter de se poser après toute enquête de géographie historique: quel a été le rôle du milieu? La géographie classique est née de la critique du déterminisme, mais le sage qu'est le géographe classique ne peut s'empêcher de s'interroger sur le rôle de ce personnage muet qu'est la nature, le paysage si l'on veut, dans l'évolution du monde'.

In 1962 (work published in 1987) Ribeiro pointed out that each region is unique and the wish to reduce the infinite number of regions to a certain number of types was dangerous, though attractive and in 1970 he pointed out that the regional monographs were still very useful in countries where the traditional structure remained and where the diversity of regional combinations had not yet been completely effaced (Ribeiro, 1970 a, p. 40).

In the same work (p. 52) he says: in spite of geographers being increasingly interested in applied geography, and not denying its importance, he says that he is not interested in these kind of studies, for two reasons: firstly, to obtain intellectual satisfaction the pleasure of understanding is enough ; secondly, because in Portugal, the government does not take notice of geographers' work.

Finally in 1972 in an article entitled 'Nouvelle géographie et Géographie classique (à propos de deux éditions récentes)' - the French translation of B. Berry's book 'Geography of Market Centers and Retail Distribution' and a new edition of P. Gourou's book 'La Terre et l'Homme en Extrême-Orient' - Ribeiro says:

'New Geography endeavours to be theoretical, quantitative and normative. It maintains that to understand, scientifically, the regularities which are to be found in the distribution of retail business and services one needs to be able to predict them according to a theory. But the scientific attitude is not necessarily deterministic and the behavior of people before a market is not always logical. As much as a central place of economic activity, the market is a centre of social life which is difficult to reduce to measurable values.

On the other hand, the passage from concrete examples to the theoretical diagram (...), implies grave distortions of both position and surface which appear contradictory to the quantitative rigour which the method lays claim to. Geographical space, far from being abstract and uniform, is rugged and differentiated.

...The book of Pierre Gourou tries to emphasize the causes of the (development)⁶², in vast spaces, of dense peasant populations which characterize the Far East. It is based on one theory: civilization, the key to explanation in geography, without, for all that, the study of its relations with the physical conditioning being overlooked. He attaches the greatest importance to a fundamental quantitative value: population density. Interesting himself very closely in the historical evolution and contemporary transformations, he nevertheless refuses to make any forecast.

...The study of the hierarchy of central places is, undoubtedly, a useful contribution to geographical knowledge, but, like any study of human geography, it must bear in mind both physical and historical

factors of localization. The assumption of a uniform plain, uniformly populated, is not a legitimate abstraction, but a meaningless statement which can only cause geographical thought to deviate from its true course'.

The influence of the French School of Geography and specially of the cultural geography of P. Gourou is always present in Ribeiro's geographical thought. Ribeiro is one of the most remarkable of cultural geographers.

The majority of theses presented then in Lisboa were monographs and the field of study the Atlantic Islands: São Miguel (Açores) by R. S. Brito, 1955; São Tomé (Gulf of Guiné) by F. Tenreiro, 1961; Santiago (Cabo Verde) by I. Amaral, 1964. M. Feio presented in 1952 a thesis on geomorphology 'A evolução do relevo do Baixo Alentejo e Algarve'. The authors though much influenced by Ribeiro introduced in their works innovations and even different conceptions (Gaspar and Gama, 1981).

The studies of I. Amaral on urban geography, in 1956 and principally in 1968, already showed evidence of the influence of the Ecological School of Chicago. But only in 1972 J. Gaspar (who presented his doctoral thesis after doing two post-graduate years at the Institute of Human Geography in Lund, Sweden, whose director was then T. Hägerstrand), introduced in Portugal the Central places theory of W. Christaller applying it to the study of the area of Évora (a town situated in a plain area). 'A área de influência de Évora. Sistema de funções e lugares centrais'.

In Coimbra, A. Fernandes Martins after a dissertation about a river basin presented in 1940 'O Esforço do Homem na Bacia do Mondego. Estudo Geográfico' where the author had good results concerning the human aspects of the area (Lautensach, 1948); became well-known by his doctoral thesis where he studied a limestone area of the centre of Portugal 'Maciço Calcário Estremenho. Contribuição para o estudo de geografia física', 1949. As Rebelo (1983 a) points out, this last work represents a reaction against the regional monograph formula (according to A. Meynier) and was the first Portuguese work where physical geography became autonomous (it is not a work done by geologists and it is not just an 'ancillary' to explain the human aspects). Ribeiro (1982) stated that it was an excellent thesis, done without adequate geological maps, which demanded rigorous and detailed fieldwork, yielding remarkable results (see also Rebelo, 1987).

In 1961, 1962 and 1964 F. Martins did studies in Moçambique on physical

geography (he studied the 'inselbergen' of Nampula, but he never published the results of his research). The interest of F. Martins in human geography, is evident in his work (since his dissertation), and he also had a special attraction for his town Coimbra, publishing two essays about it. Nevertheless his most remarkable studies are on physical geography. He is remembered for his lectures and left in Coimbra a tradition of studies based on rigorous fieldwork. (He taught in Coimbra from 1942/43 until 1982).

In Porto, the Faculty of Arts was created in 1919⁶³, but due to financial problems was closed in 1928⁶⁴. Mendes Correia who became well known as an anthropologist initiated the teaching of Geography there. Physical geography was taught by geologists. This Faculty was recreated in 1961⁶⁵ and the Geography course started in 1972⁶⁶.

This period (1911-1973) saw the development of geography teaching and research in Lisboa and Coimbra. In both Universities the possibilist paradigm became dominant. Regional monographs were the traditional theses work, but this did not become a hindrance to the development of physical and human geography specialized studies, namely in geomorphology, urban geography, 'rural way of life' and agrarian systems⁶⁷. Geography of the tropical regions (the successor to the 'colonial geography'), was one of the most developed aspects of geography; the research almost exclusively done in the Portuguese colonies. It is also necessary to point out the importance of the studies done on the Atlantic islands.

The creation of the 'Centros de Estudos Geográficos' in Lisboa and Coimbra were fundamental to the development of geographical research (see Amaral, 1981 a). On the contrary, the small number of geography students in both Universities was a constraint on the increase in the number of staff members and consequently on diversifying the fields and topics of research. The small number of graduates in geography was a very serious constraint on the development of geography teaching at all levels and very specially at secondary school level.

5.2.2.2 Geography at school level

During the First Portuguese Republic (1910-1926) there was political instability with serious economic and social consequences to the Nation. Nevertheless, in relation to education, in 1911 there were remarkable reforms

specially at primary ⁶⁸ and higher education levels.

The primary education reform (though utopian due specially to the financial problems of Portugal at the time) included the development of pre-school education and the prescription at primary level of three years of compulsory education. To end illiteracy temporary schools specially addressed to adults were created. For teacher training a big number of schools were created, with up-to-date methods and resources. The results reached at the end of the First Republic were important, but not so good as the reformers aimed, mainly for the reasons already indicated (political instability and lack of financial resources).

Some of the reforms at higher education level have already been mentioned. Higher education received special attention during this period.

At secondary level a committee to elaborate a project of reform was appointed in 1911, but only in 1917 was a reform decreed, which was replaced the following year by another. In fact, during this period there were several reforms of the education system and consequently many alterations of the curriculum and syllabuses; they did not contribute noticeably to improving the quality of teaching, but on the contrary caused a lack of continuity inimical to any kind of improvement.

In relation to technical education good results were obtained during this period. It was developed and up-to-date.

After 1913 (when the Ministry of Public Instruction was restored) ⁶⁹, until 1926 (end of the First Republic), there were 40 Ministers of Public Instruction (quoted from Carvalho, 1986, p. 705), some of them distinguished in different domains, but their work was not accomplished due to governmental changes which led as a result, to too frequent ministerial changes. During this period, one of the main problems at an educational level was the lack of a general plan of education, and the reforms at different levels were consequently, not clearly articulated.

On 28th May 1926 there was a military 'coup d'état' which instituted a dictatorship. In 1933 a new Constitution was approved by plebiscite and the power was then attributed to the President of the Republic, the National Assembly, the Government and the Tribunals, but in fact the Prime-Minister, Salazar, became the true and sole source of political power (Marques, 1981). This regime (which called itself the 'Estado Novo', 'New State') was only overthrown on the 25th April 1974, at the time of Salazar's successor, Caetano.

The first ministers of education of the 'Estado Novo' implemented policies which were reactions against those of the republican regime namely reductions: in compulsory schooling, primary school curricula, primary school teacher education (see Mónica, 1978 and Simões, 1987). Since 1936 the Minister of Education, Carneiro Pacheco had as his main aim to inculcate the ideology of the regime on youth through: reforms of the education system; of curricula and syllabuses at different educational levels; the creation of a youth organization the 'Mocidade Portuguesa'; and direct control and centralization of all aspects of education.

During the post-war period, economic development required modifications in the educational policy. The Government proposed in 1952 a plan of public education ('Plano de Educação Popular') and in 1956 when Leite Pinto was Minister of Education, compulsory schooling was extended from three to four years (at first applied to boys only; to girls in 1960) ⁷⁰. In 1964, when Galvão Teles was Minister of Education, compulsory schooling was extended to six years without ending the policy of 'strong social reproduction and elite preparation as priority function of the educational system' (Simões, 1987). The last Minister of Education of the regime, Veiga Simão (appointed in 1970) tried to do what the same author calls a 'renewal within continuity'.

Some of the main aspects of education during this regime were: the priority given to an elite preparation; the control and centralization of education and the inculcation (specially strong in the period when Carneiro Pacheco was Minister until the advent of Minister Pires de Lima, 1936-1955), of an ideology based on religion, nationalism, respect for family as an institution and for family values and the cult of authority - God, Fatherland, Family, Authority (see Mónica, 1978 and Simões, 1987).

As Simões (1987) pointed out in the primary school curriculum the inculcation of nationalism showed a constant tendency to increase throughout this regime and he explained that this was in order to mobilize young males for the fight in Africa, where the colonial war began in 1961. In fact this inculcation of nationalism was always very strong (its landmarks were: the commemorations of 800 years of Portuguese Nationality and 300 years of the Restoration of independence in 1940, the nationalistic propaganda during the 50's due to the possibility of occupation of the Portuguese possessions in India by the Indian army (which happened in 1961), and later, due to the colonial war in Africa. Simões (1987) says that the content of the moral component in secondary education was mainly nationalistic inculcation

(greater in grammar schools 'liceus', than in technical schools and greater in the first cycle than in the second cycle). The study of Portuguese language and History of Portugal, the activities of 'Portuguese youth' ('Mocidade Portuguesa'), compulsory cultural sessions in 1936, Choral Singing, in 1936, all envisaged the instilling of nationalism. Geography also had an important role in nationalistic inculcation.

This inculcation was possible because the curriculum and the syllabuses were elaborated by committees whose members were appointed by the Government; the books adopted in schools were previously officially approved and in primary and secondary schools the 'book unique' was imposed ('sole book' that was a compulsory book) for a number of subjects; evaluation methods and criteria were also fixed by the Government. The Government also exerted direct control of schools, choosing their headmasters (since 1930); punishing the teachers who showed disapproval of official policies or orders; impeding access to the profession for political reasons. This happened at all education levels including higher education and teacher training.

During this period a large number of primary schools were built; and specially since 1952 (due to the need to develop industry) the Government showed a particular concern in diminishing illiteracy (this also concerned adults). According to an official document, in 1955 only 1.0% of children between the ages of 7 and 11 did not go to school (in 1930 this percentage was 73.1%). However, then, only about one third of the children and adults passed the third and fourth class examinations (quoted from Carvalho, 1986, p. 792-793).

The Government showed great concern for secondary education ('liceal' and technical) and new schools were built everywhere in Portugal. The number of children in secondary education increased more than ten times between 1926 and 1974, but the number of teachers did not increase in the same proportion, consequently the number of children in each classroom increased which was not favourable for teaching purposes.

The project of general education reform of Veiga Simão corresponded to a real improvement of education. The proposed educational system (see Appendix A, Figures A.2.1 and A.2.2, p. 372-373) comprised three levels of schooling: primary, secondary (1st and 2nd stages) and higher. The compulsory school attendance period (basic education) covered primary education and the first stage of secondary education. Wherever possible it was preceded by a period of two years of pre-school education, provided in nursery schools.

Primary education lasted four years; the first stage of secondary education, provided in preparatory schools, covered two periods of two years each: the first in an observational course that was different in nature from the existing preparatory course, the aim being, to follow and observe pupils' psychological and pedagogical progress; the second was a course of orientation, stressing the development of pupils and making it possible for them to select rationally the type of school or employment that best suited their aptitudes. An extension of compulsory attendance to eight years, that is, till the end of the first stage of secondary education (approximately age 14) was then proposed.

At the end of the compulsory school attendance period, came the general courses of the second stage of secondary school, which covered two years. These courses were provided in three different branches characterized by the relative importance given to teaching subjects in the fields of letters and pure sciences, applied sciences and their technologies and also aesthetics and applied arts and crafts. However in each branch, a humanistic education was provided. The general courses of this second stage of the secondary school were followed by a complementary course, also lasting two years, with a flexible system with optional subjects. (MEN - Portugal, 1972).

Even after the Revolution of 1974, the reform of Minister Veiga Simão remained as the basis of the educational system. There was also development in higher education in spite of the financial exigencies and the control exerted over staff, students, curricula.

After this introduction the evolution of geography teaching during these two periods: the First Republic period and the New State period will be analysed⁷¹.

The place of geography in the curriculum

The secondary school curriculum ('liceal') changed several times during this period. Except in the reform of 1926 secondary education lasted seven years (six in 1926). After a general course of 2+3 years (reforms of 1918, 1919, 1921, 1930, 1947 and then until the end of this period) or 3+2 years (reforms of 1917 and 1926) or 3+3 years (1936); there was a Complementary Course of two years (one in 1926 and 1936) with two sections - arts and sciences - until the 1936 reform. In 1936 the two different sections were abolished but after 1947 there were several groupings

of subjects, eight in 1947 - with a regime by subjects and not by class.

The study of geography in the general course was prescribed until the end of the period (1911-1973). But in the first cycle, geography was included in 1930 in a discipline called Natural Sciences, and since 1936 in the Geographical and Natural Sciences discipline with elements of geography, biology, physics and chemistry.

In 1967/68 the Preparatory Cycle was created (it replaced the two first years of secondary education). The then approved curriculum included the discipline of History and Geography of Portugal and in 1972 at the time of Veiga Simão's reform, experimental syllabuses were created and the study of geography was included in the syllabus for Human Sciences.

In the second cycle the study of geography had always been prescribed, except in the 1936 reform (the study of geography was not then prescribed for the 4th, 5th and 6th years) and in the Complementary Course geography was always prescribed for the arts and sciences section and since 1947 for the groupings of subjects leading to the following university courses: Geographical Sciences, Economics and Finances and Colonial High School Courses.

During this period (1911-1973), either a whole number of hours for geography and history teaching was stipulated (which happened for the general course in 1917 and 1930) or there were separate timetables. In this case the number of hours ascribed for geography teaching in the general course, was superior to that allocated to history teaching.

In the Complementary course geography was prescribed for both sections (arts and sciences), history only for the arts one (except in 1919), and for the sections quoted above since 1947. The importance of history in relation to geography increased after 1947. In Portugal geography did not have a subsidiary place in the secondary school curriculum in relation to history, as in France. It was essential for geography to become an independent subject for it to acquire a growing importance.

Geography also had a place in the Professional Schools curricula. In the syllabuses dated from 1952 (and altered in 1954 and 1955) the study of Geographical and Natural Sciences was prescribed for the Preparatory Cycle, and Systematic and Economic Geography for the Commercial Course.

Aims⁷²

During this long period the main aim of geographical teaching in secondary education was to help pupils acquire a knowledge of the Earth, of its physical and human aspects and specially of Portugal and its colonial empire. The development of mental faculties was also mentioned.

Secondary education 'liceus' were for much of this period, reserved for an elite. During the 'general course' this elite acquired a 'general culture', which obviously included the knowledge quoted above. The Complementary Course prepared pupils for higher education so a more specialized knowledge of geography was given to pupils.

'Professional' schools (Industrial and Commercial)⁷³ were assigned more practical aims linked to pupils' future occupations. For example: to familiarize pupils with the more usual processes of utilization, of natural productions and energy in order to educate their practical capacities as future economic agents. Special importance was therefore given to the study of economic geography.

Nationalistic inculcation is also an aim of geographical education, specially in periods of crisis. For instance at the time of the colonial war it was stated in the 1968 syllabuses of History and Geography of Portugal for the preparatory cycle: 'The love of our history can be identified with the knowledge and the love of our territory'.

In the 1972 experimental syllabuses of Human Sciences (for the 3rd year of the first stage of secondary education, Veiga Simão's reform), the aims were much better defined than previously, and they included cognitive, affective and social aspects.

The objectives of Human Sciences were to develop: a) A knowledge and understanding of the World and Man of today and of their interrelationships, that is, the cultural and social reality of today; b) Attitudes needed to assume social responsibilities; c) The formation and the development of a scientific mind through the study of the cultural and social reality.

The political changes which began on 25th April 1974 put an end to the experiments with the new syllabuses.

The syllabuses structure and content

(See diagrams of the organization of the education system in Appendix A, p. 371-373).

a) The General Course of 'liceus' (1st to 5th years)

From 1918 until 1926 geography teaching started with the study of the elements of cosmography, cartography, physical geography, elementary geographical aspects of the continents and seas and geographical terminology.

The ME instructions recommended starting with the study of the local area in order to acquire an elementary knowledge of it and to enable pupils to use examples from this area to illustrate the prescribed geographical aspects quoted above. This study of the local area would also contribute to developing pupils' capacity of observation. During pedagogical walks pupils would carry out direct observation of the local area and at the same time, observe it on a map (1919 syllabuses).

For the other years of the General Course a regional study of the continents was prescribed, and of some countries in particular (specially the great European powers, the USA, Japan and in 1918 also Argentina). The study in more detail of Portugal, of the Açores and Madeira, of the Portuguese colonies and of Brasil was also prescribed (1918, 1919, 1926 syllabuses). The order in which the continents were studied was changed, without any justification being given.

According to the 1918 and 1919 syllabuses the study of Portugal was to be done when studying Europe; that of the Portuguese colonies on studying Africa, Asia and Australasia. Nevertheless in 1926 the study of geography became prescribed only for the three first years of the General Course (and not for five as previously) and the study of Portugal, of its colonies and of Brasil was to be done in the third year after the descriptive and comparative study of the continents, prescribed for the second year.

In the 1919 syllabuses the study of the history of geography was recommended and in 1926 that of the most important polar expeditions.

It is evident that at the time it was considered essential to do in the 'General Course', a study of elementary aspects of systematic geography, before doing a regional study of the continents and in more detail of the great world powers, of

Portugal and its colonies and of Brasil. The order in which the regional study of the continents was undertaken did not seem important at the time.

The 1919 syllabuses are the best examples of encyclopaedic syllabuses. The syllabuses were reduced in 1926, but then the study of geography was concentrated in three years, instead of five.

The regional study of the continents was essentially descriptive, nevertheless the instructions advised undertaking: a comparative study; the use of indirect observation; and in the fifth year, a synthesis of the knowledge acquired previously (1919 Instructions).

The 1st and 2nd years

In the 1930, 1931 and 1934 syllabuses the study of geography in the two first years of secondary education was included in a discipline called Natural Sciences. The so-called geographical initiation was not very different from the previous syllabuses; the study of elements of cosmography, cartography, physical geography and human and economic aspects of the local area was also prescribed, as well as the study of elementary aspects of continents and seas. In the second year the study of ethnographical aspects (man, races, languages, religions...) was to be undertaken and of the Chorography of Portugal, the Açores and Madeira (1930 syllabuses) and also of the other Overseas territories (1931 and 1934 syllabuses).

The regional study of the continents (physical, human and economic aspects) was prescribed for the second cycle (3rd, 4th and 5th years).

In 1936 the name of the discipline changed from Natural Sciences to Geographical and Natural Sciences. It was a three years' course. The geographical content was simplified but did not change because it included elements of cosmography, cartography, physical systematic geography and the descriptive study of continents. It was stated in the comments on the syllabuses that the inclusion of descriptive geography (physical, political and economic), of natural sciences and of elementary notions of physics and chemistry, should not be a mere juxtaposition of content but should be articulated in order to reach an aim: 'knowledge of Earth'. The creation of this discipline was meant to reduce the number of subjects, and teachers, and the complexity of the study of these sciences.

In 1947 the division into two cycles (2+3 years) was re-established. Then,

in the first cycle the geographical content of the Geographical and Natural Sciences was reduced to elements of mathematical geography (essentially cosmography), some geographical aspects of continents and seas and some elements of physical geography. In 1948 the study of geographical aspects of the continents and seas was excluded.

In the comments on the syllabuses it was stated that the syllabuses of the discipline of Geographical and Natural Sciences were altered in depth because the previous ones were but a juxtaposition of content (from geography, natural sciences, physics). The study of the different phenomena and of their interrelationships was centred on the 'knowledge of the Earth' but it was done through the study of descriptive geography which did not lead to a demonstration of the interrelationships among different phenomena. The aim of the new syllabuses were to remain the same, 'knowledge of the Earth', but the Earth as the Man's environment. Prime importance was given to the study of physical, chemical and biological phenomena, which create and modify the environment where Man lives and develops his activity. In 1954 these syllabuses were only slightly altered.

The study of this discipline was interesting and when the teacher was able to adapt it to pupils' age, could contribute to developing pupils' capacities. The ME recommended that teaching be based on observation and experiments. Nevertheless the difficulties of using the experimental method in classrooms with too many pupils were pointed out. Pupils were to undertake individual work on a simple topic (monographs) under the teacher's direction. These works would contribute to motivating pupils and to developing their capacities for work, for resolving problems, for observation and reasoning (this work was prescribed in 1947 and 1948).

In 1968 the 'Preparatory Cycle' (1st and 2nd years) was created and the above discipline was entitled Natural Sciences and the content was simplified. The part concerning the relationships between human beings and their environment was very much reduced.

At the same time the discipline of History and Geography of Portugal was created. In the previous syllabuses the study of history had been linked with that of Portuguese language. In these syllabuses the historical part was the most important. The geographical part included in the first year, the study of some elements of cartography, and that of Portugal, Açores and Madeira in the XVth century. In the second year the study of Portugal of today was done starting with the local environment, followed by a study of Portugal and Overseas Provinces (agricultural;

industrial and commercial centres; political and administrative organization; transports network; cultural centres; spiritual interests and evolution trends). The final synthesis was: Portugal and Portuguese population. The variety of territories and races and national unity. The Portuguese idea of one universal community. The role of Christianity in acquiring it. Perspectives. The ideological role of the discipline was evident. It was the time of the colonial war in Africa.

The 1972 experimental syllabuses (Veiga Simão's reform) for the 3rd year maintained the discipline of Natural Sciences and special importance was given to the relationships of animals with Nature, including human beings and to pollution and environmental conservation. The 1972 experimental syllabuses of Human Sciences included the study of Earth, Man and Economies. In fact it included in the 3rd year essentially the study of geographical aspects of the Earth (physical, human, political and economic) and some ethnological ones. The aims of these syllabuses (see p. 143) have already been mentioned. They show evidence of the objective of improving pupils capacities including those of understanding and accepting cultural differences, of intervening in their communities, of acquiring the instruments needed for an objective interpretation of social and cultural reality. It was a deep modification in relation to 1967/68.

Fernandes (1981) points out that these experimental syllabuses in Human Sciences were strongly criticized by the right wing. Its inclusion in the curriculum was approved by the 'Corporative Chamber' ('Câmara Corporativa') but the same Chamber severely judged the syllabuses. Measures were even taken by a member of the governmental team, 'to change' these syllabuses.

The 3rd, 4th and 5th years

From 1947 until 1973/74 in the 3rd year of the General Course elements of cosmography, cartography, time in relation to longitude, the continents and the oceans and a systematic study of the climate followed by the regional study of the continents were studied.

The order of studying the continents was: Europe, Asia, America, Oceania and Africa (1947); Europe, Asia, Africa, America, Oceania (1948, 1954); Africa, America, Oceania, Asia, Europe (1970/71, 1971/72). Firstly, it was deemed appropriate to start the study of the continents with Europe where Portugal is located. In 1970-1972 the authors of the reform explained that the study of Europe was too complex and it was better to start the study of the continents with Africa in

which for example, the distribution of climates was easier to explain.

The study of Portugal, Açores and Madeira and of the Portuguese colonies was undertaken at the end of this cycle. This study included that of the physical aspects, population, settlement, agriculture, industry, transport, trade (imports and exports). The study of the Portuguese geographical regions did not occupy a very important place, it occupied in one adopted book (Loureiro and Patricio, not dated) 21 pages and in other (Vieira, Moura and Palma, not dated) 17 pages (in the last edition before 1974). In 1947 for each year of the General Course a 'monograph' of a European country, of Brasil and of a Portuguese colony were prescribed, but this disappeared in 1948.

From 1947 until the 1973/74 school year there was stability in the second cycle curriculum, and the alterations introduced did not change its global structure. In 1954 all the sentences with colonial connotations disappeared and the designation 'Portuguese Overseas territories' replaced the designation 'Portuguese Empire'.

b) The Complementary Course of 'liceus' (6th and 7th years)

During this period, the study of geography in the Complementary Course always included systematic geography. According to the 1919, 1926 and 1936 reforms the study of geography was only prescribed for one year of the Complementary Course. In these reforms the geography syllabuses included as well as the study of systematic geography, elements of cosmography and cartography.

According to the 1918, 1929, 1930 and 1931 reforms, the study of geography was prescribed for two years (6th and 7th). In this case the study of elements of cosmography and of the systematic geography always preceded that of Portugal, Açores and Madeira and of the Portuguese colonies. Different syllabuses were not prescribed for the Arts and Sciences Section⁷⁴. In 1947, in the Complementary Course, the study of geography was only prescribed for the groupings of subjects leading to a small number of university courses (see p. 142).

The 1948 reform prescribed for the 6th year the study of: a cosmographic initiation; systematic physical geography, anthropogeography and economic geography; for the 7th year the study of political geography followed by this of Portugal and its Colonial Empire - with special importance being given to their

economic aspects. The 1948 syllabuses were not altered in depth until the 1973/74 reform.

The analysis of geography syllabuses prescribed in 1948 for the 3rd, 4th, 5th, 6th and 7th years leads to the following conclusions:

1. It was regarded as indispensable to start the study of geography with mathematical aspects (cosmography and cartography). The study of cosmography done in the 3rd year was much deepened in the 6th year.
2. In the 3rd year the study of climates was prescribed before the study of continents.
3. For the regional study of all continents the study always followed the same order: situation; area; relief; oceans; seas and coasts; climate; rivers; economic products; population.

When studying individual countries special importance was to be given to the economic aspects in relation to physical background and natural resources. Pupils should also learn the names of the main cities.

In the instructions it was stated that the pre-1948 syllabuses showed an excessive concern with systematic geography, which led to a concentration on descriptive geography. In fact before, but still after 1948, the study of geography in the 3rd, 4th and 5th years was essentially descriptive, though good teachers demonstrated the relationships among physical, human (and economic) phenomena. Nevertheless the adoption of the same structure for the study of all the continents led to a monotonous study.

'Case studies' were not recommended as in England; geography was mainly an enumeration of facts to learn by rote and localize on maps. Nevertheless the explanation of the localization of phenomena and of their interrelationships led to good mental exercises using the inductive or deductive method.

4. The study of Portugal, Açores, Madeira and the Portuguese Colonies prescribed for the 5th year included the study of the same aspects as for the study of other countries though in more depth. In the 7th year special

importance was given to the study of economic aspects of the Portuguese Empire, 'to imprint on the pupils' mind the notion that our Empire has potential value and that there is a need to study and know its evolution and to direct this according to national interests'.

In France the study of the country by regions was made in depth in 'classe de 1^{ère}'. In Portugal this study was not prescribed for the Complementary Course ⁷⁵.

5. The study of cosmography prescribed for the 6th year included that of the vault of heaven; how to locate the stars, the planets by trigonometry, the Earth; the sun and the moon (some simple mathematical exercises were also compulsory). One part of this study was not linked to the rest of the syllabuses content. But in Portugal it was deemed important that pupils acquire this cosmographic knowledge. In fact as it was seen before in some previous reforms this study was included in the mathematics syllabuses.
6. For the 6th year as well as the study of cosmography that of systematic geography was prescribed. Special importance was given to physical geography. The study of physical geography was merely theoretical, pupils did not usually do any fieldwork and only a very small number of excursions (one or two one-day excursions each year) to observe some physical and human phenomena, were organized.

Anthropogeography (this terminology was still used in the 1954 reform) included the study of the concept of anthropogeography; the distribution of Man; forms of civilization; the evolution of civilizations. For the 6th year the study of the Geography of the Production was also prescribed.

For the 7th year the study of Political Geography was prescribed, which included the study of the great world powers; the expansion of races; national expansion; colonial empires and their evolution; economic and political expansion (of the great world powers); and finally the study of Portugal and its Colonial Empire (see above 4.).

In 1954 reform the syllabuses were only slightly altered but the sentences with colonial connotations disappeared.

In the officially adopted 'book unique' (compulsory book) for the 6th and 7th years (Moura, A. and Vieira, E., 2nd ed. not dated but which was published

between 1955 and 1961) ⁷⁶ Cosmographic Initiation occupied 63 pages; Physical Geography 173 pages; Biogeography 23 pages; Anthropogeography 50 pages; Economic Geography 58 pages.

In 1972 they were again altered, mainly simplified, for example the study of Biogeography disappeared.

7. For the 7th year according to official instructions, the student's book should only contain a bibliography, statistical data, maps and other elements needed for pupils to study and discuss different topics. Teachers should direct, help and criticize pupils' work. In practice although some work was done by pupils (the number varied according to the teachers' and pupils' interest in the subject), teachers dictated notes, pupils wrote them down and learned them for tests and for examination. In fact teachers prepared their pupils for examination, and this was their main aim.
8. It is important to point out that in the 1974 edition of the adopted book for the Complementary Course (Moura and Vieira) the authors stated that the writing of the chapter on Climatology was based on E. De Martonne's 'Traité de Géographie Physique'. In the chapter concerning the relief they quote the French E. De Martonne, Derruau and P. Birot and some Portuguese works such as: M. Feio 'A Evolução do Relevo do Baixo Alentejo e Algarve', 1952; O. Ribeiro 'Le Portugal Central', 1949; J. Dias 'Minho, Trás-os-Montes, Haut-Douro'; A. Fernandes Martins 'O Maciço Calcário Estremenho', 1949.

The same authors were mentioned in the previous edition, done almost 20 years before. In fact the physical geography chapters were essentially based on E. De Martonne's work and the authors added Portuguese examples.

In the 1974 edition (p. 259) the authors state that Human Geography was based on the works of: Brunhes, Urbayen, Girão, V. de la Blache, Ribeiro, Demangeon, Sorre, Finch and Trewartha, George, Gilbert, Turlot and Lequeux. The same authors were also indicated 20 years before.

To give another example, the bibliography indicated for the study of Portugal in 1974 (which included the work of P. Birot 'Le Portugal' and works of A. Girão and O. Ribeiro, beyond the H. Lautensach and M. Feio 'Bibliografia Geral de Portugal') were almost the same indicated 20 years before. In 1974

the work of O. Ribeiro 'Portugal' (1955), was included but the quotation of one work of Silva Telles, dated from 1929, among others, had disappeared.

The facts mentioned above demonstrate that between 1947 and 1974 there was too much stability in geographical content at school level.

Yet, even in the 'liceus', the majority of pupils no longer belonged to an elite, who might acquire a minimal culture in the first five years and a preparation to University in the two last years of secondary education. The number of pupils in secondary 'liceal' education increased 121.7% between 1969/70 and 1973/74. The biggest increase in technical schools was between 1947/48 and 1969/70.

There was an increasing need to adapt teaching to the new Portuguese realities and to the new pupils. It has already been mentioned that Veiga Simão, started to experiment with new syllabuses. These experiments did not continue and after the revolution of the 25th April 1974 new syllabuses were adopted.

Links with other disciplines

At the beginning of this period geography and history were already separate subjects with separate syllabuses, and in the 1918, 1919 and 1926 geography syllabuses and in the 1919 instructions there were no specific references to the need for linking the two subjects. In 1926 geography was taught in the 1st, 2nd and 3rd years and history in the 4th and 5th years.

But in the instructions concerning the Complementary Course from 1929, it was pointed out that history is strongly associated with geography, and without geography it was not possible to teach history. Geographical knowledge, as much as the interpretation of geographical facts, are indispensable for the understanding of social phenomena and consequently geography teaching must not be merely descriptive but give importance to intelligent interpretations.

The 1930 and 1931 syllabuses for the 3rd, 4th and 5th years showed a special concern with linking the two subjects and in the observations concerning history teaching it was stated that was fundamental to relate historical events with the physical and moral environment where they occurred and the description of territory must precede historical narration, and maps must always be present.

It was in 1930 that geography in the first cycle became included in the Natural Sciences discipline, called Geographical and Natural Sciences after 1936. In 1967/68 the Preparatory Cycle was created and Geography and History of Portugal were prescribed for the two first years. (From 1947 until 1967/8, in the 1st and 2nd years, history was mainly linked with the study of Portuguese language).

In the 1948 and 1954 instructions concerning geography teaching in the 3rd, 4th and 5th years it was mentioned that geography needed constantly to use notions from other sciences. In the history instructions it was stated: it is necessary to remember the relations that exist, in some cases, between social and human realities and physical environment, but without overstating the influence of natural conditions. A fundamental importance should be given to psychological aspects⁷⁷.

In the 1972 experimental syllabuses for the 3rd and 4th years, as has already been indicated, geography was included in the study of the Human Sciences discipline.

In the Complementary Course when the regime by subjects (instead of by sections) was adopted, the independence of the syllabuses concerning the different disciplines was guaranteed. In fact, according to the 1947 reform, geography was no longer compulsory for future history students at university and vice versa for geography students. Only for the section preparing for the Economics and Finances Course and for the Colonial Higher Education School, history and geography were they both compulsory subjects.

Teaching methods and resources

In the syllabuses observations and instructions it is pointed out that the study of geography should start by an inductive knowledge of the local area for developing pupils' capacity for observation and to see local examples of different geographical phenomena (1918, 1919, 1930, 1931, 1934 and 1936). This study of the local area was not prescribed in 1947, 1948 and 1954.

According to the 1968 History and Geography of Portugal syllabuses, pupils should do research on local history and geography and on their relationships, and compare them with regional and national ones (pupils should do short projects, illustrated with maps, drawings, photos...).

For geography teaching the use of globes, maps, relief maps, atlases, projections, pictures, and so on, was repeatedly advised. Map reading; the elaboration of the classroom plan and of maps; the copy of topographical maps and other maps; the use of different maps (physical, political, economic) to localize geographical facts. Orientation exercises were also repeatedly prescribed. Besides indirect observation, 'pedagogical walks' were advised and pupils should take notes of their observations.

In the 1948 and 1954 syllabuses' comments it was pointed out that though geography was a science of observation, at school level direct observation would be very restricted and much importance should be given to indirect observation (pictures, slides, films, graphs, data, sketches, documents, maps).

Also pointed out in the same syllabuses was the importance of textbooks for geography teaching specially until the 5th year (textbooks should be in accordance with the syllabuses and have statistical data, graphs, pictures and maps in order to be officially approved). In the Complementary Course the importance of the textbook should be reduced, because in the 6th year autonomy should be given to the teacher, and in the 7th year the book should only contain bibliography, statistical data, maps, all the elements needed to pupils' work on the different topics and to discuss them.

In 1914 (Carvalho, 1986) individual practical work in different disciplines including geography was prescribed for the Complementary Course (6th and 7th years). In 1917 for the 6th and 7th years of the Arts and Sciences sections one and a half hours of individual practical work in geography was prescribed. The number of hours per week varied, but this practical work was for both sections until 1930 and for the Arts section until 1936 (the 1936 reform did not mention them anymore). This individual practical work according to the 1929 syllabuses included, for the 6th year, work on: cosmography; elaboration of regional maps; ordnance survey map reading and other exercises; exercises on climatology (with direct phenomena observation), including weather forecast ones; for the 7th year works on relief; rivers, lakes and oceans profiles; elaboration of maps and graphs on population and graphs on production; transport exercises; elaboration of monographs about areas known by pupils and near the school (excursions were compulsory for elaborating them)⁷⁸. In 1934 the practical work syllabuses for the Arts Section only were much simplified and included climate phenomena observation exercises; map reading exercises; map reading (for the 6th year); and elaboration of graphs

of population, production, rain fall, temperature and other works on Geography of Portugal (for the 7th year). This practical work was still organized by some teachers, even after it disappeared from geography syllabuses.

The quality and the quantity of geography resources varied from school to school (the same happened in England and France). During this period there were (as today) big differences from school to school. The best equipped were the main city 'liceus' and mainly those where teacher training practice was taking place. The quantity and the quality of resources had an important influence on the kind of teaching.

Teaching was essentially teacher centred (teacher transmitted the content). Some secondary schools had a room for teachers to work together but the teachers timetables were not favourable to team teaching. Except during teacher training, teachers worked mostly independently. It was compulsory to teach the whole syllabus: if the teacher did not she/he should justify this (the same happened in France).

It was pointed out that teachers organized only a very small number of excursions for various reasons each year: lack of financial resources and other teaching resources, timetable organization, syllabuses with too much content to cover, deficient teacher preparation and so on ⁷⁹.

5.2.2.3 Teacher training

The creation of the 'Escolas Normais Superiores' in 1911, has already been mentioned. These schools were reorganized in 1918⁸⁰. The teachers training course lasted two years: in the first year students were to acquire pedagogical preparation (theoretical mainly but there was also some practical work); in the second year students were to do teaching practice in a secondary school, under the guidance of a supervisor. At end of the two years course there was an examination (with two orals to test his/her pedagogical knowledge; two lessons; and the discussion of a dissertation on a didactic topic).

In 1930⁸¹ these schools were abolished. The teachers theoretical preparation was to be done in the Faculties of Arts and teaching practice was to be in a secondary school (it was pointed out that the previous system never worked well because there was no link between the 'Escolas Normais Superiores' and the

'liceus' and the students examinations necessitated interruptions in secondary school and universities work). 'The fundamental principle' of the new system was 'the separation between the pedagogical culture and the pedagogical practice'. This appeared as an innovation to put an end to the interruptions of work quoted above, but in fact this was the most important weakness of the system.

Pedagogical sections were created in the Faculties of Arts. It was compulsory for future teachers to study five disciplines: Pedagogy and Didactics; History of Education and School Organization and Administration; Principles of Psychology; School Pedagogy and Mental Measurement; and School Hygiene. The pedagogical practice was enlarged to two school years and was to be done only in two 'liceus', one in Lisboa and the other in Coimbra. For each subject the number of places was fixed (if there were too many candidates there was a selection examination). The final examination was maintained. Almeida (1981) points out the fundamental disadvantage of this system: the lack of any articulation between the initial scientific preparation, the pedagogical sciences and teaching practice.

Until 1973/74 this system was maintained though several alterations had been introduced. At the end of the period these alterations had the main objective of increasing rapidly the number of trained teachers, due the rapidly growing number of pupils arriving in secondary education.

The researcher did her teacher training according this system, like the system prior to 1930, there was no link between scientific preparation, pedagogic preparation and teaching practice. The organization of the geography university curriculum showed a special concern with transmitting to students, knowledge about different aspects of geography and areas of the Globe and the techniques needed to do research work (in order to elaborate the final dissertation - a regional monograph). The irrelevance for future teachers of some of the Pedagogical Sciences content was evident, others had objectives more in accordance with their interests and needs namely Principles of Psychology and School Pedagogy and Mental Measurement.

During teaching practice we learned and tried different methods in order to do more imaginative teaching and to adapt it to pupils' interests and needs. The link with pedagogical sciences was established by the future teacher when he/she could remember something that he/she had learned quickly with the sole objective of passing the examination.

To finish the analysis of this period it would be useful to make reference to some geographers that wrote about geography teaching during this period.

5.2.2.4 Geographers' writings about geographical education

Pereira de Sousa (1925) states that the book he published in 1901 about the Physical Geography of Europe, based on the works of Lapparent and Suess and elaborated in accordance with the new geographical methods, was the 'first Portuguese didactic work on modern geography'. The author aimed to initiate the pupils (from the 'liceus') in geomorphology, in order to facilitate its study at University level later. According to the author his work had no influence on the modernization of geography teaching and he did not published the volumes about the other continents.

In 1906 Silva Telles published a book entitled 'Elementos de Chorographia Portuguesa' for the last year of Primary Education, with pictures and maps. This book according to O. Ribeiro (1976) was too difficult for primary school children, but the author was able to show in his book the 'correlations that are the essence of Geography'. The book had only one edition and was replaced by textbooks which only had lists of names to learn by heart ⁸².

Heleno Junior (1919) in a book about geography teaching in secondary education shows evidence that he had a good knowledge of modern geography and specially of geography teaching in Portugal and in foreign countries. He indicates the importance of geography for education ^{83, 84}, he points out the need for adapting geography teaching to pupils' mental development, criticizes the syllabuses for, among other aspects, their inadaptation to pupils' psychology and argues that the study of geography should go from the known progressively to the unknown; from the simple to the complex; from the natural region, to the country, Europe... He also points out the need to start by direct observation, and advises the use of different teaching resources, and among them the most important - maps. The author states that, above all, to improve geography teaching the most important thing is to have good teachers and he criticizes the geographical preparation given then by the Faculties of Arts: the curriculum of the course of 'Historical and Geographical Sciences' had among 30 disciplines, only 7 in geography; the teaching there was only theoretical, students did not receive any preparation for undertaking practical work at school. Besides this he points out that

geography was linked with history at University level and separated at secondary level; that teachers with a philosophy course could teach geography at secondary schools, until the 5th year, when they had only passed one geography course at University, viz. the Geography of Portugal and its Colonies.

In 1929 A. Girão writing about geography teaching in 'liceus' and Universities, pointed out that many geography teachers did not have an adequate preparation in the subject and was against the link of geography with history at University, claiming that its linkage with Geology at the Faculties of Sciences would be more favourable to the preparation of good teachers.

In 1934 Santa Rita writing about Silva Telles stated that his influence at University on future secondary school teachers had been very important for the improvement of geography teaching. He gives several examples: his disciples initiated practical work in the 'liceus', organized a plan of regional studies to be elaborated in the schools; had written textbooks with a new orientation (not only with factual information). In 1941 Afonso regretted that practical geography work had been abolished from the Complementary Course, in 1936.

From 1933 until 1936 A. Girão published his lessons on Human Geography⁸⁵, in 1941 the 1st editions of the Atlas of Portugal and the Geography of Portugal⁸⁶; between 1941 and 1943 O. Ribeiro published articles in the magazine 'Liceus de Portugal' about the modern orientation of Geography, in 1945 the first edition of 'Portugal, O Mediterrâneo e o Atlântico', and in 1955 'Portugal'; Fernandes Martins published his main works in 1940 'O Esforço do Homem na Bacia do Mondego' and in 1949 'Maciço Calcário Estremenho. Contribuição para um estudo de Geografia Física'. The works quoted above, the excursion-guides for the IGU Congress held in Lisboa in 1949 and some works about the Açores and Madeira Islands and about the Portuguese Colonies namely from I. Amaral, F. Tenreiro, M. Feio and R. S. Brito were the most widely read by secondary school geography teachers and had thus an important role in improving geography teaching.

Until very recently Portuguese geography secondary teachers read mainly French authors. The influence of the French School of Geography was very strong and works such as Vidal de la Blache 'Principes de géographie humaine' (translated by Martins in 1949); the 'Traité de Géographie Physique' of De Martonne; the 'Précis de Géographie Humaine' of Derruau, and among others the works of P. Birot, P. Gourou, P. George were important in geography teachers scientific preparation. To prepare their lessons teachers often used secondary school

French textbooks such as: the collection edited by P. Gourou and L. Papy (Hachette); that of Guglielmo, Lacoste and Ozouf (Nathan)...

There was no tradition in Portugal of research in geographical education. Many school teachers attended the IGU Congress held in Lisboa in 1949. There was a section on methodology and teaching but among the five communications on teaching, none was from a Portuguese. In the geography magazines the number of works published on geographical education was very small. For example in *Finisterra* during the 1966-1975 period only five 'Documents for teaching' were published: the first suggesting the use of newspapers and weather data for teaching purposes (Alves, 1970); the second on group work (Cavaco, 1972); the third on mental maps (Gaspar and Morin, 1975); a note on the use of games (Lema, 1973); the fifth (from Maia, 1974) is about the first in-training course held at the Centre of Geographical Studies in Lisboa, on December 1973 for about 40 secondary school teachers.

To summarize the evolution of geographical education during this period some aspects can be pointed out:

- a) During the First Republic the political instability led to too many reforms of the education system, curriculum and syllabuses alterations, which were not favourable to the improvement of secondary school education.

In geography better syllabuses were replaced by worst, only because the Minister of Education changed. This problem was aggravated by the lack of adequate teacher preparation. The introduction of practical work in 1914 could have been an important innovation if the majority of teachers had adequate training to undertake them.

- b) During the 'New State' regime, specially since 1947, there was too long a stability of geography syllabuses for the 3rd, 4th, 5th, 6th and 7th years. The syllabuses were not altered in depth until 1974.

The fact that textbooks had to be officially approved and in some cases there was only one approved textbook, was also not favourable to updating the content of geography.

- c) The place of geography in the two first years of secondary education changed very much during this period: first it was a separated subject; after 1930 it was integrated in a pluridisciplinary subject the Natural Sciences,

after called Geographical and Natural Sciences where geography has a dominant place. Geography lost importance in these two first years since 1947. In 1968 it became linked with history, but was subsidiary in relation to this subject. In the experimental syllabuses of Human Sciences (from 1972) for the 3rd year, geography had an important place.

In the general course (3rd, 4th and 5th years) the study of geography has been always prescribed (except in 1936 reform). At a complementary level the study of geography was prescribed for the Arts and Sciences Sections. But in 1947, when the system of grouping by subjects was established, the place of geography in the curriculum diminished because the discipline was compulsory only for a small number of courses.

In the Professional schools the place of geography was especially favourable in Commercial schools.

- d) To start the study of geography by mathematical geography and by elementary notions of systematic geography; to apply the learned concepts to the study of continents and of Portugal and its Overseas territories, and study in the Complementary Course in more depth systematic geography, Portugal and its Overseas territories and the Great Powers of the World, was deemed to be an adequate way of organizing the curriculum.

A deductive approach was thus prescribed. Nevertheless until 1947 it had been advised to start the study of geography in a local area, this idea came back again in 1968.

Systematic and regional geography had a predominant place in the curriculum, as well as physical geography.

- e) The influence of French geography was very important. However in Portugal the study of cosmography was much more important than in France and on the contrary the study of the Country by regions had only a small place in the syllabuses if we compare them with French ones.
- f) Until the end of this period the 'new geography' did not have any influence on school geography.
- g) The very small number of graduates in geography and the small number of candidates admitted to teacher training were probably the most serious hindrance for improving geographical education at secondary education level.

5.2.3 The 1974-1990 period

On the 25th April 1974 there was a revolution which made profound political, social and economic changes possible. Among them the re-establishment of a democratic system, after 48 years of dictatorship and the end of colonial war. A widespread idea was about the need to modify all the fascist institutions, and to create a new Portugal, without an oppressive political system which controlled the expression of opinion and the actions of every citizen.

It was pointed out that during the old regime there was state control of all education, at all levels. After the 25th April 1974 it was generally agreed that there was a need to give autonomy to all institutions, because their development would result from an open discussion (with the participation of all members) of their problems and of setting new targets for their development.

At the educational level, the directions of all institutions was given to committees democratically elected which replaced the direction given by the Government. Universities progressively acquired financial, administrative and pedagogical autonomy. They managed their finances, chose freely their directorates and their staff, and controlled their curricula. At school level the Government still controls the finances, staff admission, teacher training and the curricula elaboration and approval, nevertheless before taking decisions about school the Government now makes the main documents concerning school management and organization available for discussion. Teachers, administrators, pupils, parents have today their trade unions and/or associations to express their opinion and defend their interests.

After this introduction some aspects of the evolution of geography at academic and school levels will be examined.

5.2.3.1 Geography at academic level

After the 25th April 1974 there was a big increase in the number of geography students, and consequently of geography department staff.

In the 70's in Portuguese universities a system of restricted entry was introduced, and as a consequence of the organization of the system, many students

did not choose the geography course as their first choice, but enrolled for geography because they had been refused entry to other courses. This had consequences for the motivation of students and in the results obtained. Further, because they intended to enter other courses, they did not have a certificate in geography from the 12th year of secondary education.

In 1989/90 year there were 254 entries for Geography Courses in Portuguese Universities (Coimbra, Lisboa, 'Nova' of Lisboa, and Porto): only 40 were concerned specifically with teaching geography, 99 with geography (without any specification) and 115 with Geography and Regional Planning. It is surprising that the requirements for entry to these courses do not include the study of geography in the Complementary Course and 12th year of secondary education (The 'Universidade Nova' of Lisboa and the University of Porto required for the 1989-90 school year mathematics - 10/11th and 12th years). The first of these universities also required an entry test in mathematics or geography and the University of Lisboa in economics or geography or geology or mathematics (Guia do Acesso ao Ensino Superior, 1989).

For 1993 (Guia do Acesso ao Ensino Superior 1993, Junho de 1990), the University of Coimbra requires : geography - 10th/11th years or 12th year; the University of Lisboa: geography or planning and urbanization - 10th/11th years and geography 12th year; the University 'Nova de Lisboa' : geography or mathematics 10th/11th years and geography or mathematics 12th year; the University of Porto: geography 10th/11th years and 12th year. The University of Lisboa also requires an entry test in geography 10th/12th years; the University 'Nova de Lisboa' in geography 12th year; the University of Porto in physical and human geography.

The increasing number of geographers working at universities allowed a rise in the number of research projects and a growing specialization.

Gaspar (1985, p. 317) points out that after 1974 'fruitful and interesting experiments in teaching and research in geography took place, particularly in human geography. The experiments involved conceptual, theoretical and methodological renewal'. He also states that 'a progressive separation of physical and human geography has broadened the scope of both' (1985, p. 322).

Daveau (1981 b) in relation to the Geographical Studies Centre of Lisboa, says that the 'Research Projects' on physical geography (subsided by the Institute of Higher Culture, now National Institute of Scientific Research) started in 1971 with a research program on geomorphology, but in 1973 the scope was enlarged to

studies on climatology. There were then (1979) 15 researchers working in these two fields, and the main research aim was solving the basic problems of the Physical Geography of Portugal, specially of mapping the fundamental phenomena at national scales but with the detail necessary to allow future studies at regional and even local scales.

Since then there has been an effective development of studies on geomorphology and climatology. Doctoral theses on geomorphology and on climatology were presented (see for instance, Ferreira, 1978; Lopes, 1979; Alcoforado, 1988) and a large number of dissertations and articles show evidence of growing specialization in these two fields. Works on hydrology and biogeography have also been published.

In Coimbra, where there was already a tradition of research in physical geography, the number of researchers in this field increased too. Works published in geomorphology and in climatology, some with practical applications, show evidence of a diversity of interests and of approaches (see Rebelo, 1983 a).

In the University of Porto research articles published on biogeography, geomorphology and climatology show evidence of a development of physical geography there.

Today the use of laboratory techniques, of a more or less sophisticated treatment of data, and of a rigorous cartography (recurring for example to remote sensing techniques) are current. Some work has potential practical applications.

In human geography there was in the same way, a progressive specialization of research, a growing interest in work with objectives in applied fields, a utilization of different techniques of data analysis, with the help of a more or less sophisticated statistical treatment of data, and utilization of computers (see Medeiros, 1989).

Mainly since the 70's, Portuguese human geography has been influenced by the positivist and neopositivist paradigm. Portuguese researchers stayed for long or shorter periods in Scandinavian, American and British Universities and the works of Haggett, Gould, Berry and Hägerstrand are probably those which exerted the biggest influence on the development of this paradigm which goes on throughout the 80's. Another important influence was the marxist paradigm, which developed in the late 70's, coming from different authors such as: Lacoste, Lefèbvre, Castells, Harvey and others (see Abreu et al, 1984; Gaspar, 1985).

Medeiros (1989) points out that this evolution did not lead to any developed work of synthesis and systematization and Portuguese researchers did not seem attracted by topics concerning geographical thought and methodology⁸⁷. Nevertheless the earlier paradigm which was the theoretical base of the works of O. Ribeiro still remains in the more recent works of this author (Ribeiro, 1981) and of some of his disciples (ex: Medeiros, 1976 a, 1976 b; Cavaco, 1976).

Portuguese geographers showed a special interest in the analysis of the regional systems, either in the ecological/historical perspective (Cruz, 1973; Cavaco, 1976) or in the Christaller perspective (Gaspar, 1972; Lema, 1980). Recently two other works on regional studies (Cravidão and Abreu, 1988) have been presented, the last work with perspectives of application for the development of the area studied (Gaspar, 1985; Medeiros, 1989).

The increasing number of studies (see Gaspar, 1985; Medeiros, 1989) done on different geographical topics shows evidence of the growing specialization in human geography: agrarian, rural and urban studies (all with a large tradition in Portuguese geography); studies on industry (which have recently had an important development); political geography (ex: electoral studies, problems of national borders, formation of states); population geography; diffusion studies (ex: epidemic diseases, agricultural innovations) and a smaller number of studies on: tourism, transports, communications, commerce and services.

Historical geography has also been a field of research and recently there has been a growing interest in the history of geography.

Studies on cartography and the growing importance given to the development of databases for urban and regional planning must also be mentioned.

The majority of geographical work concerns Portugal, including the Açores and Madeira, but in Portuguese geographical magazines, articles on tropical regions are still being published. The importance of these studies during the previous period has already been mentioned, its decline in number is the result of the lack of facilities to do fieldwork (war, transports, communications...) and of subsidies.

Portuguese geography is now influenced by geographers from different countries who have taught here for a longer or shorter period or who have chosen Portugal to undertake their research. Further Portuguese geographers have stayed

in different countries for shorter or longer periods.

Since 1979 five Iberian Geographical Conferences (Colóquios Ibéricos de Geografia) have been held which have been important in reinforcing scientific contacts between geographers of the two countries (contacts until then were not frequent) and which preceded meetings of Portuguese geographers (never held before) (Medeiros, 1980, 1984).

There are now three main geographical magazines: Finisterra (published by the Geographical Studies Centre of Lisboa); the 'Cadernos de Geografia' (published by the Institute of Geographical Studies of Coimbra) and the 'Revista da Faculdade de Letras - Geografia' (published by the Faculty of Arts of the University of Porto). The two last ones started to be published in 1983 and 1985 respectively. Different influences, paradigms, approaches are evident on reading the articles published there.

Will Portuguese or Iberian Geography find an original pattern of development?

5.2.3.2 Geography at school level

Before the 25th April 1974 the structure of the 'Ensino Básico' (Basic Education) included four years of primary education and two years of primary complementary education or of preparatory education (by direct teaching or at a distance by TV). Six years of compulsory schooling for all, but in fact better chances of entering and obtaining good results in secondary education were available to those pupils who followed the preparatory school direct teaching and lived in cities.

The reform of the Minister of Education Veiga Simão has already been mentioned, who intended to increase compulsory schooling for eight years (4 years of primary education + 4 years of 1st stage of secondary education). Nevertheless after the 25th April 1974 the previous structure of education was maintained. It was impossible to increase the compulsory schooling to eight years due to lack of establishments and qualified teachers and at the time an important percentage of pupils did not even complete the six years of compulsory education (see Fernandes, 1981).

After the 25th April 1974, profound alterations in the primary and preparatory education curricula were introduced. Alterations in the objectives, content, methods

and evaluation processes⁸⁸.

The primary education curriculum was first altered in 1974-75. In the following year there was a new alteration to the curriculum and the study of 'Meio Físico e Social' ('Physical and Social Environment') was introduced.

The preparatory education curriculum was first modified in 1974 and two different areas were created: the area of communication and the area of experience; the discipline of 'History and Geography' belonged to the second one. In the following year this discipline was replaced by 'Estudos Sociais' ('Social Studies') in the first year and 'História de Portugal' ('History of Portugal') in the second year.

In 1980 there were again modifications in the primary and preparatory curricula and the syllabuses of the disciplines of 'Meio Físico e Social', 'Estudos Sociais', 'História de Portugal' and 'Ciências da Natureza' ('Natural Sciences')⁸⁹ were altered. It is beyond the scope of this work to study these alterations (see Roldão, 1987 and Gonçalves, 1986, 1989). Nevertheless it seems important to point out some syllabuses aspects. (The analysis concerns those of 1980).

The study of the 'Meio Físico e Social' is organized by topics concerning Society and Nature. According to the syllabuses this study should start by the resolution of problems concerning the local environment - physical and social - and continue with the study of the region, the country, the Earth, the space. A historical perspective was also introduced starting with knowledge and research done in the local or regional area. Children should start with the exploration of the local area in order to later on acquire the capacity of conceptualization. The need of adapting the experiences to pupils' mental development is also pointed out. In the syllabuses the objectives concerning the study of each topic are indicated and there are suggestions for activities and resources adequate to reach the cognitive objectives and to develop attitudes and habits concerning the social and natural environment. Geographical aspects were obviously included in some topics namely those concerning the study of the population, economic activities, transport and communications, the humanization of the landscape; the climatic and physical aspects (of the region and of Portugal); the Earth; the Space. The use and making of maps, graphs and models is advised.

A critical analysis of these syllabuses was done by M. A. Barrios and M. H. Cavaco (see MEC/GEP, 1986). The definition of aims and objectives (of the different domains) in accordance with the goals of primary education and the

suggestion of activities based on pupils' experience which can contribute to link the school with the environment are among their positive aspects. Besides the positive aspects, severe criticism of these syllabuses were formulated. Cavaco, a geographer who worked with primary teachers in a project for renewing the study of the 'Meio Físico e Social' criticizes them for their lack of scientific rigour and because they did not facilitate the learning of basic knowledge, the questioning of reality, creative thinking.

Gonçalves (1986) presented to primary teachers a questionnaire about these syllabuses and their opinion was predominantly favourable (nevertheless the sample was too small). The importance of these syllabuses for geographical education was not evaluated.

The syllabuses of the discipline of 'Social Studies' introduced in the first year of preparatory school in the 1975/76 school year, were later on modified. The content was altered but not the aims. To integrate pupils into Portuguese society (starting from the known to the unknown) and motivate them for the study of Contemporary Portugal in a historical perspective (which will be done in the 2nd year) are their aims (see the 1981/82 syllabuses). The content is organized by topics; their study will lead to the objectives. The content includes geographical, economic, political, social and cultural aspects of Contemporary Portugal. In topics such as: Portuguese physical environment; distribution of population; economic activities; rural and urban environment, geographical aspects are predominant or very important.

In the analysis of these syllabuses Cavaco (MEC/GEP, 1986) points out among their positive aspects the inclusion of objectives from different domains and levels: the acquisition of knowledge, the development of capacities, attitudes and values. Among the negative aspects: the objectives are not attained due to the absence of an enquiry approach, of pupil participation or even of a more flexible content and the syllabuses are not well articulated with those of other disciplines of the 1st year, those of primary education and those of History of Portugal (2nd year).

These syllabuses are usually taught by historians, not prepared to adopt an interdisciplinary approach. Their importance for geographical education was not evaluated but their negative aspects and the lack of teachers' preparation are obviously very important constraints.

After the 25th April 1974 there were many important alterations in secondary education namely the abolition of the distinction between 'liceus' and 'technical schools' (they became equivalent to 'comprehensive schools'). (See diagram of the organization of the educational system in Appendix A, p. 374). Thus there was a unification of the general course (7th, 8th and 9th years), which started in the 1975/76 school year, with three main objectives: to give the same opportunities to all children independent of their social origin; the modernization of pedagogical methods and processes; and the enlargement of the school's social function opening it to the community (Emídio, 1981, p. 197). The curriculum became the same for all children except in the 9th year (since 1978). For this year there was a core curriculum and nine optional areas whose main role was to provide unity between the General and the Complementary Course (however this did not happen due to the lack of qualified teachers and the options made available in each school were not adapted to regional needs, Emídio, 1981, p. 198).

In 1978⁹⁰ Complementary Course were restructured. The main intention was to abolish the distinction between courses given in technical schools and 'liceus'. So these courses (10th and 11th years) were organized in five 'areas of study' (natural sciences; technological sciences; social and economics sciences; humanities; arts) with a core curriculum; disciplines of specific formation (compulsory and optional) and vocational disciplines. The creation of these areas was to facilitate both access to higher education and integration in active life.

Later on (in 1983) three years technical-professional courses were created giving besides a core curriculum, specific vocational preparation; they were specially appropriate for pupils not wishing to study beyond the 12th year of schooling. A one year professional courses were also created.

In 1974/75 the Student Civic Service was created. To have access to University pupils had to work for one year for the Community (after the end of the 11th year of schooling) and in 1977/78 it was decided to restrict entry ('numerus clausus') to all University courses and the Propaedeutic year was created⁹¹ (it was taught by television), with the objective of preparing pupils to enter University. Finally, in 1980⁹² the 12th year of schooling was created, with different courses: five preparing for higher education, giving complementary information and preparation in the disciplines adequate for different higher education courses; others were vocational courses giving information and practice in several technical areas. (The number of pupils following these vocational courses was always very

small: they gave in fact, insufficient professional preparation and made difficult the access to higher education, other than the Polytechnic higher education).

It has already been mentioned that in 1986 the 'Comprehensive Law on the Education System' was approved. Later on a new reform of the education system was launched and general principles of basic and secondary education curricula were published in 1989. (See Appendix A, p. 375-376). New syllabuses are on trial now.

The place of geography in the secondary school curriculum

During this period, the curriculum of the Secondary Unified General Course (7th, 8th and 9th years) was modified several times and consequently the place of geography in the curriculum changed.

In 1975 the 7th year curriculum included the following disciplines: Portuguese, mathematics, a foreign language, natural sciences, introduction to the social sciences, art education, physical education, crafts, catholic religion and moral education and 'Polytechnic Civic Education'.

'Introduction to the Social Sciences' was pluridisciplinary. Through its study pupils were to acquire some knowledge about society today and the role of individuals and groups in solving its social and cultural problems. This was to contribute to pupils acquiring the knowledge, skills and attitudes required by citizens. Teaching in accordance with the aims of the subject was preconized: syllabus flexibility to adapt teaching to the local area, the class, the pupil; the activity and participation of pupils; use of an inductive method, starting from direct and then indirect observation of the local environment; the encyclopedic, memorization of facts was to be banished and instead the development of pupils' capacities, namely conceptualization and making relationships. The content was organized in three groups of topics: with aspects predominantly geographic, economic or social and cultural. The first group (the geographic) included the following topics: Man and Nature - stimulus and response; Balance between Man/Nature - dangers of rupture; populational movements - demographic explosion and its control; urban and rural space. There were pedagogic instructions in an annex, a bibliography, and some relevant extracts from geography books. The geographic content was still in accordance with the possibilist paradigm and the authors quoted predominantly

French authors in the bibliography: M. Derruau, P. George, A. Sauvy, H. Laborit... and even textbooks adopted in French schools: Prévot (Ed. Belin); Ed. Bordas; Ed. F. Nathan...

This discipline was taught by teachers with different kinds of training. In the researcher's school: these teachers were geographers, historians and philosophers. The new syllabus was sent to schools only at the beginning of the school year and teachers had not had any preparation to undertake pluridisciplinary teaching or social studies, and in spite of the efforts they made, the teachers' own training became dominant and the result were three very different approaches to teaching the subject. They did not have the preparation to employ the teaching methods indicated above either. Until then pedagogy was essentially centred on activities developed by teachers, now a pedagogy was demanded centred on pupils activity; importance was given not only to cognitive development but also to affective, social and moral development. The lack of resources and institutional organization also became very important constraints in implementing the new approach.

The new curriculum included the area of 'Polytechnic Civic Education' whose main aim was to contribute to the development of the social function of the school through its integration in the community'⁹³. Some schools made interesting experiments, in others this kind of Education was not implemented. Some geographers undertook important collaborative work studying the realities and the problems of the local area with their pupils. The development of this activity required teacher autonomy, interdisciplinarity, pupils' active participation and the collaboration of individuals and bodies not belonging to the school. This was in opposition to traditional institutional organization and functioning, and in spite of good results obtained in some schools, the experiment was stopped.

In 1977/78 the study of geography was re-established in the 7th year. Since 1979 and until now the study of geography has been prescribed for the 7th, 8th and 9th years of schooling with a timetable of 2 hours per week in the 7th year, 3 hours in the 8th year and 2 hours in the 9th year (the study of geography in the 9th year was re-established in 1980/81).

From 1975/76 until 1979/80 the curriculum of the Unified General Course was modified several times for political and personal reasons (see Emídio, 1981).

It was pointed out above that the 10th and 11th year of the complementary courses were restructured in 1978. In 1979 new alterations in the curricula were

introduced. Geography is now an optional discipline for the 10th year of the area of Scientific-Natural studies (3 hours per week); a vocational discipline (compulsory) for the 10th and 11th year (respectively 2 and 3 hours per week) of the vocational courses of Planning and Urbanization in the area of Economic and Social Studies; and optional for the 10th and 11th year (3 hours per week) in the area of Humanities and geography is also an optional discipline for the 1st, 2nd and 3rd courses of the 12th year of schooling (the 4th and 5th courses give access to courses of Languages and Literatures and Arts; the 1st, 2nd and 3rd to all the other courses).

The syllabuses

a) The Unified General Course

For the 7th year the study of the concept of geography, observation of the local area, and its inclusion in the region, in Portugal, in Europe and in the World and the study of systematic physical geography (relief, atmosphere and the world great bio-climatic environments) are prescribed; for the 8th year it is Geography of Portugal - physical and human; for the 9th year, Human Geography of continents and economic activities is required: World population; agriculture in Europe, America, Asia, Africa; industry in Europe, America, Africa, Asia; European, North American, Latin American, African and Asian cities.

All the syllabuses include a definition of aims; for example those in the 8th year are: 1 - to use the methods and techniques of geographical research in order to understand the main problems of Portuguese geographical space; 2 - to understand the unity and diversity of Portuguese geographic space; 3 - to develop informed critical attitudes in relation to spatial problems; 4 - to participate as citizens, in the resolutions of the problems of the community. These are very general aims, impossible to reach by the end of the 8th year. The syllabuses also contain operational objectives such as: to localize Continental Portugal in Europe and in the Iberian Peninsula; to give characteristics of the predominant forms of relief; to explain the formation of the relief. A total of 99 operational objectives all in a cognitive domain for the 8th year. The content in the 8th year is presented according to the traditional plan: relief; climate; population; rural space; industrial space; urban space; transport networks; regional asymmetries; Portugal and the World.

There are no suggestions for activities but a bibliography is included. For the 7th year, the relevant author is O. Ribeiro. All the other authors are French. A Brazilian edition of vol. I and II of the Earth Science Curriculum Project is the only work of an other origin; the works of geographers indicated for the 8th year are from A. Girão, O. Ribeiro and geographers of his school; for the 9th year are indicated the works of P. Haggett, H. Carter, L. Bourn, C. Clark, H. Clout, J. H. Paterson, P. Toyne and P. Newby, among others. P. Claval with 3 works is the most quoted French author.

Answering teachers' complaint about the overload of the 7th year syllabus, schools were sent suggestions on how to manage the syllabus (adequate importance of each topic, number of hours that should be dedicated to each one). It seems evident that there is a contradiction between the aims of developing research activities, pupils' participation, critical attitudes and the formulation of detailed operational objectives only in the cognitive domain. The prescription of the number of hours for each topic is also a constraint.

In the next chapter the teachers and pupils opinion about these syllabuses will be presented. The 9th year syllabus is included in Appendix C.

b) The Complementary Course

In the Scientific-Natural area of studies the study of physical geography, essentially of aspects of climatology and geomorphology is prescribed. In the area of Humanities the syllabus include human and economic geography and the study of the organization of the rural, industrial and urban spaces is prescribed. The structure of this syllabus is similar to those of the general course and in spite of it being indicated that in the 11th year knowledge acquired during the general course should be applied and integrated, the articulation of these syllabuses with this of the 9th year give rise to problems. (The bibliography indicated for the 9th year is also suggested for the 11th year, except for four titles in a total of 29).

In the area of Economic and Social Studies (vocational course - Planning and Urbanization - Technician of the Environment) the study of Human Geography is prescribed. Only a few schools have this vocational course. In the syllabuses' introduction it is stated: 'Geography, the science of places or the science of the organization of space, has as its objective the study of the interaction between human beings and the natural environment'. The relation between Nature and Society is its 'raison d'être'. The syllabuses aims are: to acquire a knowledge of the

spatial organization of the world of today; to explain this organization (relationships between Nature and Society); the role of individuals and groups in the resolution of the problems of today and to show evidence of the need for pupils to participate in the resolution of the problems of their community. Their content include the study of: I - Geographical space; II - The organization of geographic space; III - Spatial asymmetries; IV - Planning and human intervention on spatial organization. The syllabuses includes specific objectives and the number of hours for teaching each topic. In the teaching instructions the importance of the teacher's role is pointed out (his attitude and the methods he employs). It is recommended that encyclopedism, the memorization of facts end and instead that students' capacities, namely that of reasoning about relationships be mobilized. To use direct and indirect observation; to stimulate students' activity (individual and in group) in order to initiate them to research in geography; to use inductive and deductive approach. To reach the objectives, students should do research work (the topic should be chosen in accordance with the school's environment). The syllabuses are flexible, in order to adapt them to the class, and to the individual student, use of the local area is also advised. The role ascribed to teachers is not only the transmission of knowledge, but also the orientation of students' research work. In the bibliography, works are quoted linked to theoretical, quantitative geography, to behavioural, radical and welfare approaches. Only three Portuguese geographers are quoted: O. Ribeiro, C. A. Medeiros and J. Gaspar.

These syllabuses are an example of a phase of transition from a pedagogy centered on the teacher to a pedagogy centered on the pupil; from the classic to the new geography, nevertheless the definition of operational objectives (a total of 100 and the number of hours for studying each topic) is a constraint on the adaptation of teaching to the school, the class, the student and to a research approach.

As has been pointed out, the 'Propaedeutic year' started in 1977/78. Teaching was undertaken by television and the lessons were published. The co-ordinator of the geography working group C. Cavaco was a University teacher. The lessons were addressed to future students of Geography, Economics and Social Sciences at university level.

It is stated that prime importance to methodological and theoretical aspects of geography will be given (not developed at Secondary Education level); to topics already studied in the complementary course, specially concerning Portugal (to do a synthesis, complement and bringing their study up to date); to link physical and

human geography, to apply knowledge to students' experience. The objectives given are: the acquisition of knowledge; skills, working methods and the development of personal initiative, a sense of responsibility and the capacity for decision; the content included the 1 - object, trends and perspectives of geography; the bases of spatial organization; spatial organization of the Portuguese territory (rural, industrial, urban, regional); Portugal and the World. The documents included operational objectives; information resources; exercises and bibliography for each teaching unit. C. Cavaco points out that there was a preoccupation with: giving students first contact with works from different schools of geography and from other sciences (including recent research works); drawing their attention to the most important problems of Portugal of today (linked with geography) on different scales and of improving their knowledge of their physical and human environment. In fact, students were given a very large quantity of important information which was also later on, used by geography teachers.

In 1980/81 the 12th year of schooling started. (The 12th year syllabus is included in Appendix C).

The aims of the geography syllabus were:

- 1) to develop students' interest by research work in geography;
- 2) to improve the utilization of new methods in geography;
- 3) to stimulate knowledge of national and international problems in order to develop Man's awareness of the World in which he lives.

The content includes:

- A Introduction: 1 - geography in the context of sciences; 2 - the evolution of geography; 3 - basic concepts of geographical analysis;
- B Effects of production on spatial organization; 1 - the organization of agrarian space; 2 - the organization of industrial space; 3 - the organization of urban space;
- C Man as spatial organizer. The demographic explosion and the big problems of the World of today.

There is a definition of specific objectives and work suggestions:

- 1 analysis, interpretation and discussion, in group, of works quoted in the bibliography;
- 2 organization of seminars with higher education teachers about syllabus topics;
- 3 utilization of films and slides obtained from different organizations included Embassies;
- 4 to give Portuguese examples of the effects of production in spatial organization, promoting the changing of resources between schools mainly when they are localized in very different geographic environments;
- 5 development of studies and projects which could be used by local authorities.

Works representative of different geographical approaches are suggested in the bibliography: regional, positivist, behavioural, radical.

The syllabus also included also the definition of specific objectives.

The timetable initially ascribed for the teaching of this syllabus was reduced from five to four hours per week. This diminished the possibility of doing active teaching and reduced the syllabus content (namely the theme C was eliminated).

Due to the importance of a 'new' geography approach in this syllabus many qualified and experienced teachers avoided teaching it. Since their initial geographical preparation was in accordance with the regional paradigm; since their teacher training valued their role as knowledge transmitters; since there was a lack of in-service training this led them to prefer more traditional syllabuses and teaching methods.

During this period there were frequent changes and several innovations were introduced in the geographical curricula, although previous courses had not been evaluated. It is evident that importance was given to: a pedagogy of objectives instead of basing teaching only on the syllabuses' content; on a child centered approach instead of on a teacher centered approach; on the development of pupils' capacities instead of stressing factual learning; on an enquiry learning approach instead of the acquisition of pre-organized knowledge; on the cognitive, affective and moral aspects of geography instead of only on the cognitive ones; on learning processes instead of only on learning products.

Teaching practice differs from individual to individual and from school to school. In geography teaching the syllabuses content still has enormous importance and if some teachers give importance to research methods, to pupils' activity, others still prefer more traditional approaches and see their role as transmitters of knowledge, otherwise new geography since the end of the 70's found a place in the secondary school syllabuses but many teachers are still more familiar with the regional approach.

There is no harmonious articulation between different school levels. Modifications introduced in one level and not in the others led to a more or less serious lack of continuity. In geography the lack of syllabus articulation is a severe constraint on developing progression in teaching

In the next chapter how geographical education takes place now in Portugal will be analysed: the institutional context; attitudes and opinions of teachers and pupils about the situation now and how it might be ameliorated; the effects on geography teaching on constraints associated with a deficiency of human and material resources; the availability of finance for an improvement in geographical education.

Gaspar (1985, p. 324) writing about recent developments in human geography in the 70's and 80's, states that the importance of geography at university level and secondary level had increased. According to the author: 'This development probably has its roots in the political climate of later years, particularly after 1976, for many politicians with interests in education and indeed, civil servants in the ME, geography probably appeared as a more "neutral" and less "ideologically pernicious" subject than the other social sciences, which burst onto the secondary schools in the period 1974-76. On the other hand, one must also remember that in Portugal after 25 April 1974, and particularly after decolonization, a general movement in the form of a search for a "new identity" for Portugal developed, associated with the new national spatial configuration and the new international reorientation (particularly towards western Europe). The Portuguese had to relearn their own "national dimension" and their new international position, questions which have a clear geographical content. The same sort of movement developed with respect to Portuguese history'.

5.2.3.3 Teacher training

Reference has already been made to the model of teacher training before 1974 (see p. 156). Teacher training was done in secondary schools under the supervision of an experienced teacher. However every year, there was only a restricted number of entrants to teacher training and the shortage of places became more extreme with the rapid growth of the number of teachers, made necessary by the expansion and reform of the school system. Due to these facts there was an accumulation in secondary schools of teachers with or even without an academic degree and without teacher training. Some alterations were already introduced in this model before 1974 (for example the reduction of training from two years to one year and the increase in the number of schools with teachers in training); it had the main objective of rapidly raising the number of trained teachers.

In 1980/81⁹⁴ a new model was launched to enable teachers to do teacher training staying in their own schools (this was not previously the case). Candidate teachers-in-post were guided by a trained teacher in the school ('delegado')⁹⁵. Candidates and the 'delegado' received support from a full-time appointed specialist, working with a group of schools in a region ('orientador pedagógico'). This model had some important aspects, among them the fact of involving school trained teachers in the process of teacher training and of giving to the school a certain enthusiasm for innovative practices. It also had inconveniences, the facts that in some schools the 'delegado' had not enough experience and competence to play his/her role, (some schools had no 'delegado') and that relatively small importance to education disciplines was given.

In 1985/86⁹⁶ a new model of teacher training based on the 'Escolas Superiores de Educação' (ESEs) and on 'Centros Integrados de Formação de Professores' (CIFOPs) from the new universities was decreed. The study of theoretical and practical aspects of education disciplines was compulsory, namely Curriculum Theory, Psychology, School Administration and Management. Teacher candidates stayed in-post and were guided in teaching practice by experienced teachers appointed by the ESEs or CIFOPs, but not belonging to the school. These teachers also introduced teachers to theoretical aspects concerning methodology of the subject directly linked with teaching practice. Teacher training lasted for two years. Higher Education institutions had the freedom of organizing the 'programme' of training by agreement with teachers doing teacher training. This model presented some advantages in relation to the previous one: the component of education

disciplines, the fact of teaching practice being supervised by experienced and selected teachers. The 'contract' established between the Higher Education institution and the teacher doing teacher training was also a positive aspect. The main inconveniences were the difficulties of 'integration' of theory with practice, the weak involvement of the school where teaching practice was taking place, the process of training (the supervisor did not belong to the school) and the fact that teachers undergoing teacher training had too many hours of compulsory teaching each week (14 to 16 hours).

In 1988 a new decree ⁹⁷ regulated the training for teachers-in-post in schools. According to this decree, teacher training lasted for two years too. Teachers followed education disciplines courses in the first year. These courses are organized by the ESEs and by universities, namely by the Open University ('Universidade Aberta'). The structure of courses is modular (modules including theoretical and practical aspects). In the second year teachers do, at the schools where they are in-post, a project of organization and implementation of teacher-learning and plan and teach, at least, a teaching unit. ('Projecto de formação e acção pedagógica'). This model received many negative criticisms, among them the poor quality of courses in education disciplines by television, the lack of competence of some school supervisors, the fact that teachers with six years in teaching were dispensed from the second year of training, considered as essential for teacher education. There are geography teachers-in-post doing teacher training according this model now.

To prevent the accumulation of more teachers without teacher training in secondary schools, the Faculties of Arts were encouraged to incorporate within, or to add on, the elements necessary for pedagogic preparation in a subject specialization. Since 1986/87 this preparation was launched in the Faculties of Arts of Lisboa, Coimbra and Porto and in the Faculty of Social and Human Sciences at the New University of Lisboa ('Universidade Nova de Lisboa'), in patterns which vary from faculty to faculty and from subject to subject. (This preparation started sixteen years before in the Faculties of Sciences). Concerning geography the course organization varies from faculty to faculty ⁹⁸. The time to opt for a teaching of geography degree and not for another degree in geography is not the same. In the Faculty of Arts of Lisboa, students must choose a teaching geography degree, before starting the first year, in the Faculties of Arts of Coimbra and Porto in the 3rd year and, in the Faculty of Social and Human Sciences of Lisboa after having completed a bachelor's degree in Geography and Regional Planning. In fact there are essentially

two different models: that of the Faculties of Arts of Lisboa, Porto and Coimbra where the education disciplines and the teaching practice ('estágio') are included in the curriculum of the three last years of a bachelor's degree course ('licenciatura') and the model of the Faculty of Social and Human Sciences of Lisboa (see Table 5.1, from Alegria, 1991, p. 10) ⁹⁹. The education disciplines courses included in the curricula of the four faculties do not differ very much. They are: Introduction to Education Disciplines, Psychology of Education, Curriculum Organization and Development (or Techniques and Methods of Education), Methodology of Geography (or Didactics of Geography) and a seminar which differs from faculty to faculty. In the fifth year (or in the sixth year in the Faculty of Social and Human Sciences) students do teaching practice ('estágio') in secondary schools under the supervision of a trained secondary school teacher. There is also in each faculty one or more teachers in charge of Methodology of Geography, of the co-ordination of teaching practice and sometimes of the seminar. They work in faculties but they are selected and experienced secondary school teachers. Until now they have not had an appropriate preparation in education disciplines. (There is no post-graduate course in Geographical Education in Portugal). Other education disciplines of education courses are lectured by specialists in the subjects.

These models have the very important advantage of giving an appropriate preparation for teaching before teachers start teaching in secondary schools. Alegria (1991) points out some advantages and problems of these models. Among the problems the fact that university curricula are not in agreement with the needs of future basic and secondary education teachers, concerning the new curricula for these levels of schooling. (Very recently a project was sent to Higher Education institutions concerning the minimum bachelor's degree certificates for teaching one area of subjects or one subject in the 2nd and 3rd cycles of basic education and of secondary education). Another problem of the above models concerns the links among university teachers in charge of giving scientific preparation; teachers in charge of Education Disciplines courses; teachers in charge of Methodology of Geography, of the co-ordination of a seminar and finally, school teachers in charge of teaching practice in schools. Obviously, to establish adequate links among them is a problem and is one of the weaknesses of teacher training now.

Estrela (1990) points out that traditionally, teaching practice was a field where theory was exemplified and applied. According to the 'Comprehensive Law on the Education System' teacher education is based on several principles, among them at of 'integration' both in terms of scientific-pedagogical training and co-

Table 5.1

**Curriculum structure of the preparation for Geography teaching
in the Faculties of Arts of Porto, Coimbra and Lisboa and Faculty
of Social and Human Sciences of Lisboa**

G - Geography; A - Yearly; S - Half-yearly

	Fac. Letras Porto		Fac. Letras Coimbra		Fac. Letras Lisboa (a)		Fac. C. Sociais e Humanas Lisboa	
1st	Mét. Anál. G. (b)	A			Expressão Gráfica	S	Expressão Gráfica	A
	Int. Est. G	S	G. População	A	Int. Informática	S	Informática	A
	Int. Geologia	S	Climatologia	A	Elem. Geologia	S	Economia	A
	Elem. Estat. (...)	A	Elem. Estat. (...)	A	Mét. Quantitat. I	A	Mét. Quantitat.	A
	G. Humana I	A	El. G. Humana	A	G. Humana I	A	G. Humana	A
	G. Física I	A	Elem. G. Física	A	G. Física I	A	G. Física	A
	Opção	A						
2nd	Opção 1	A					Planeam. Reg. Urb.	A
	Opção 2	A					Teorias Pol. Des.	A
	Elem. Biogeog.	A	Biogeografia	A	Elem. Ecologia	A		
	Form. Mundo(...)	A	Form. Mundo(...)	A			Quadro Fís. Plan.	A
	G. Física II	A	Geomorfologia	A	G. Física II	A	G. Indústria	S
	G. Humana II	A	G. Urbana	A	G. Humana II	A	G. Rural	S
			G. Rural	A	G. Rural	A	G. Urbana	S
					G. Urbana	A	G. Act. Terciárias	S
3rd	G. Econ. Social	A	G. Econ. Social	A	Mét. An. Reg. Loc.	A	G. Econ. Social	A
	G. Física Port.	A	G. Física Port.	A	G. Portugal	A	G. Portugal	A
	G. Humana Port.	A	G. Humana Port.	A			Ecologia Apl. Plan.	A
	Antropologia (...)	A	G. Regional	A	G. Reg.: a Terra	A	Mét. Plan. Reg. Urb.	A
					Opção	S	Opção	A
	Int. C. Educ.	A	Opção (c)	A	Int. C. Educ.	A		
4th	Seminário	A	Seminário	A			Seminário	A
	Opção	A					Semin. (ou 2 Opç.)	A
	Teoria e Mét. G.	A	G. Com. Ec. Eur.	A	G. Com. Ec. Eur.	A	Trab. Invest.	A
	Psicologia (...)	A	Opção 1 (c)	A	Psicologia Ed.	A	Anál. Regional	A
	Org. Des. Curric.	A	Opção 2 (c)	A	Org. Des. Curric.	A		
	Mét. Ens. G.	A	Opção 3 (c)	A	Didáctica G.	A		
5th	Estágio	A	Estágio	A	Estágio	A	G. Gr. Espaços (e)	A
	Seminário	A	Seminário (d)	A	Seminário	S	Psicologia Educ.	A
					Seminário	S	Mét. Téc. Educ. (f)	A
							Int. C. Educ.	A
							Didáctica G.	A
6th							Estágio	A
							Seminário	A

(a) Choice in the 1st year of registration.

(b) 'Expressão Gráfica' included.

(c) Education Disciplines (compulsory for Geography teaching).

(d) Scientific.

(e) Scientific and pedagogic.

(f) The same 'programme' as 'Organização e Desenvolvimento Curricular'.

(Alegria, 1991, 10)

ordination between theory and practice. This new role of theory in relation to practice, increases the value of the practice (Estrela, 1990, p. 13).

One problem of teacher education is also of reaching an harmonious integration of the above aspects.

Due to the recent alteration of the curricula of basic and secondary education (namely the integration of the study of geography with history in the 5th and 6th years of schooling and with economics in the 12th year), as well as for dissemination, for instance of the use of new technologies, new methods of teaching and evaluation, an increasing organization of in-service training is needed. In-service training is organized by the ME (central and regional departments), trade unions, teachers associations, scientific associations, higher education institutions, schools... The topics concern scientific and educational aspects. In-service courses can last hours, days; a month or even more. There is a lack of planning and the teachers 'real' needs are sometimes not taken into account. Much more in-service training to respond to teachers needs will be necessary.

5.3 Summary

The most relevant political and educational changes occurred from 1836 to 1990 mentioned in this chapter are presented in Tables 5.2 a to 5.2 e.

This chapter started with a summary of theories of the evolution of disciplines. It has been pointed out that some authors explain the evolution of one discipline by the emergence of schools of thought, which, in some cases, can be a national school. The leader of a school can have substantial power over the discipline. O. Ribeiro was the leader of the School of Geography of Lisboa and was the most well-known Portuguese geographer. In Coimbra, A. Girão and F. Martins have also been dominant individuals. In both cases changes of view, or of approaches depended on a new generation of geographers.

As far as the evolution of geography at higher education level in Portugal is concerned, the most relevant fact was the dominance of the regional paradigm until the 70's and since then the fact that many researchers have chosen other approaches - positivist, neopositivist, marxist..., to find an answer to new problems and to respond to the demands made upon them by Portuguese society in rapid mutation during the two last decades.

The evolution of geography at academic level obviously had a big influence on school geography, but to explain its evolution, other causes might be brought in: political ideologies, pedagogical theories and practices, educational provision.

All the educational ideologies mentioned in the beginning of this chapter were influential in Portuguese secondary education: classical humanism, progressivism, reconstructionism, technocratic-bureaucratic. If the first one was no longer accepted after 1974, the other three exert their influence upon educational theory and practice today.

Political ideologies have exerted a constant influence on schools; evidence of this fact was shown in relation to geographical education.

It was also pointed out that there is a discrepancy between legislation and other official documents concerning geographical education in schools and the teaching practised there. The two following chapters concern schools' realities, evidence for the lack of agreement between theory and practice will be demonstrated, as well as the need for a curriculum planning that takes into account a historical perspective.

Political and educational changes from 1836 to 1990

(Tables 5.2 a to 5.2 e)

Table 5.2 a**Political and educational changes from 1836 to 1910**

Year	Dominant political Ideology or political events	Geographical events	Geography at higher education level	Geography at secondary education level
1836	Liberalism.		Reform of higher education.	Reforms of primary and secondary education. Creation of 'liceus'. Secondary school curriculum included the study of 'Geography, Chronology and History'.
1875/76		Creation of the Geographical Society of Lisbon (SGL).		
1888				Geography became an independent subject at secondary education level, but the teaching of geography was only prescribed for one school year.
1890	British ultimatum- -Patriotic reaction.			
1894				The study of geography and history is prescribed for the seven years of secondary education.
1904			Institutionalization of geography at higher education level. Silva Telles is appointed to the geography chair in the 'Curso Superior de Letras' (a).	
1910	The Monarchy is abolished. The First Republic is proclaimed.			
				Between 1836 and 1910 there were periods of political instability. There were several reforms of education. The most important syllabuses for studying the evolution of geography teaching were those of 1872, 1886, 1888, 1889, 1895 and 1905.

(a) In Portugal like in England (Oxford - 1887 and Cambridge - 1888) as well as in other European countries the institutionalization of geography at higher education level was preceded by its presence at primary and secondary education levels.

Table 5.2 b**Political and educational changes from 1911 to 1941**

Year	Dominant political Ideology or political events	Geographical events	Geography at higher education level	Geography at secondary education level
1911	First Republic. Political instability.		Reforms of primary and higher education. Creation of 'Faculdades de Letras' (Faculties of Arts) of Coimbra and Lisboa with a Section for 'Historical and Geographical Sciences'. Creation of 'Escolas Normais Superiores' (Higher Schools of Education).	Several reforms of secondary education due to governmental changes. The most important reforms for studying the evolution of geography teaching were those of 1918, 1919 and 1921.
1926	Military 'coup d'état' which instituted a dictatorship regime.		Reform of 'Faculdades de Letras' (Faculties of Arts). The reform maintained geography linked to history.	Reform of secondary education.
1930			Geographical sciences at University became independent. 'Escolas Normais Superiores' (Higher Schools of Education) were abolished. Teachers' theoretical preparation was to be done in the Faculties of Arts.	
1933	A new Constitution was approved. Estado Novo (New State). Prime-Minister Salazar became the source of political power.			
1936				Reform of secondary education. The place of geography in the curriculum was reduced.

Table 5.2 c**Political and educational changes from 1942 to 1970**

Year	Dominant political ideology or political events	Geographical events	Geography at higher education level	Geography at secondary education level
1942/43		Creation of Geographical Studies Centres in Coimbra (1942) and Lisboa (1943).		
1947				<p>Reform of secondary education.</p> <p>The place of geography in the curriculum of the 'general course' of 'liceus' was reestablished. In the 'complementary course' of 'liceus' a regime by subjects (groupings of subjects) was established.</p> <p>Great stability of the curriculum of the 'general course' and 'complementary course' of 'liceus' until 1974 (3rd to 7th years - ages 13-17).</p>
1949		The XVI th Geographical Congress was held in Lisboa.		
1957			Reform of 'Faculdades de Letras' (Faculties of Arts). Course increased from 4 to 5 years.	
1961	Colonial war started in Africa.			
1967/68				<p>Creation of the 'Preparatory cycle' (1st and 2nd years - age 10-12).</p> <p>The curriculum included the study of 'History and Geography of Portugal'.</p>

Table 5.2 dPolitical and educational changes from 1971 to 1986

Year	Dominant political ideology or political events	Geographical events	Geography at higher education level	Geography at secondary education level
1971			Reform called Veiga Simão, then Minister of Education.	Geography was included in the 3rd and 4th years of the 1st stage of secondary education (ages 12-13) in Human Sciences. Experiments with new syllabuses ended in 1974/75.
1972			The Geography course restarted at the Faculdade de Letras (Faculty of Arts) of Porto.	
1974	Revolution of the 25th April. Re-establishment of a democratic regime.			
1975/76 to 1979/80				The 'study of geography and history' was replaced by 'Social Sciences'. Geography loses importance in the curriculum of the Unified General Course (7th, 8th and 9th years - ages 12-15). Since 1975/76 until 1979/80 the secondary school curriculum was modified several times, particularly due to political reasons. Since 1979/80 geography reestablished its place in the secondary school curriculum.
1979		First 'Colóquio Ibérico de Geografia' (Iberian Geographical Conference).		
1980				The 12th year of schooling was created.
1986			Publication of the 'Comprehensive Law on the Education System'.	

Table 5.2 e**Political and educational changes from 1986 to 1990**

Year	Dominant political ideology or political events	Geographical events	Geography at higher education level	Geography at secondary education level
1986/87 (since...)			Preparation of teachers launched in the 'Faculdades de Letras' (Faculties of Arts).	
1988		Creation of the 'Associação de Professores de Geografia' (Geography Teachers Association) and of the 'Associação Portuguesa de Geógrafos' (Portuguese Geographers Association).		
1989				Publication of the general principles of basic and secondary education curricula included in the new reform of the education system.
1990/91 (since...)				Experiments with new syllabuses for basic and secondary education are being done.

Compulsory attendance decreed in:

- 1911 - 3 years
- 1956 - 4 years (boys)
- 1960 - 4 years (girls)
- 1968 - 6 years (or age 14)
- 1986 - 9 years (or age 15) (which applies to pupils who enroll in the first year of basic education in or after the 1987-1988 school year).

CHAPTER 6

Results of the Survey of Geographical Education in Portuguese Secondary Schools

6.1 The Questionnaire Survey

As Cohen and Manion (1985) indicate 'surveys gather data at a particular point in time, with different intentions, among them: describing the nature of existing conditions'. According to Moser and Kalton (1971), it is helpful to distinguish four broad types of survey subject matter, one of them concerned with people's opinions and attitudes.

It was decided at the outset of the research that a survey was the most efficient method of acquiring the type of information that was required, and to collect it, a mail questionnaire seemed to be the only viable way of carrying through an enquiry with a sample covering the whole of Continental Portugal (excluding the Açores and Madeira). The main constraints that affect the use of a mail questionnaire were obviously over finances, resources and time.

Cohen and Manion (1985) quoting Tuckman, 1972, presented a summary of relative merits of interviewing versus questionnaire (see Appendix D1, p. 423). During the planning of the survey and its administration, the disadvantages concerning questionnaires were taken in account, in order to minimize them. The same authors quoting Davidson, 1970 indicate the typical stages in the planning of a survey (see Appendix D1, p. 424). In the same way, the survey proceeds through defined stages:

Firstly the main purposes of the survey were defined:

- a. to obtain a description of existing conditions in the teaching of geography in Portuguese state secondary schools (teachers' qualifications, resources, teaching methods);
- b. to collect information of teachers' opinions about the geography curriculum and how to improve geography teaching in general and the geography curriculum in particular;
- c. to collect information on students' attitudes towards geography.

In order to attain these purposes three questionnaires would be needed: one

addressed to teachers with two parts, the first part addressed to the heads of geography departments, in order to obtain information about existing conditions for the teaching of geography in their schools, the second part to geography teachers (including the heads of geography departments).

The other two questionnaires were addressed to students: 9th year students (the 9th year is the last year of the 'Unified General Course') and to 12th year students (the 12th year is the last year of secondary education). In the 'Unified General Course' (7th, 8th and 9th years) geography is a compulsory subject; in the 12th year it is optional (see Chapter 2). The questionnaire was only addressed to students who chose the subject.

In the pilot questionnaire (see Appendix D2) the part addressed to the heads of geography departments included questions on the school - name and address, type of school, total student numbers (in years, 'areas of study' and courses), total student numbers from the 10th, 11th and 12th years following geography courses; and questions on the geography department - total geography teacher numbers (by type of timetable) equipped geography rooms, percentage of geography classes taught in geography rooms, textbooks used in geography classes, departmental allowance.

The second part of the questionnaire addressed to geography teachers included questions about teachers - name and address of their establishments, age, sex, teaching position - head of geography, academic qualifications, training qualifications, years in teaching, teachers' timetable in the questionnaire year; questions about the teaching of geography - teaching and assessment methods for 'Unified General Course' and for 'Complementary Course' and 12th year, use of teaching resources in both courses, opinions and amount of fieldwork in geography courses; questions on the geography curriculum - opinions about the present geography curriculum and opinions on how to improve the teaching of geography in general and the geography curriculum in particular. Criticisms and suggestions about the questionnaire were also asked for.

The pilot questionnaire addressed to 9th year pupils included questions about pupils - name and address of their schools, age, sex, specialist area, academic background; questions about the level of interest in 9th year subjects, reasons why they relatively like or dislike geography, level of interest in different aspects of the 'Unified General Course' geography curriculum. A definition of

geography and comments and suggestions on the teaching of geography were also asked by the questionnaire.

Finally, the pilot questionnaire addressed to 12th year students also included questions about the students - name and address of their schools, age, sex, academic background, 12th year course and two subjects other than geography that they were following; questions on factors influencing the choice of 12th year geography; questions about the level of interest in different aspects of geography; questions on their opinions about the relevance of geographical knowledge in day to day life; questions on their opinions about the teaching of geography and how to improve it, finally questions about their future career plans. The questionnaire also asked for a definition of geography.

The review of the literature about the subject suggested aspects needing investigation as well as giving a contribution to the question specification.

Some of the questions concerning attitudes used scaling procedures. In the use of attitude scaling there is always the problem of reliability and validity. Reliability is an attribute needed in a scale, that implies that repeated measurements made by it under constant conditions, will give the same result. Validity means the success of the scale in measuring what it sets out to measure, so that differences between individuals scores can be taken as representing true differences in the characteristic under study (Moser and Kalton, 1971).

The term validity includes three basic kinds of validity, each of which is concerned with a different aspect of the measurement situation: content validity, predictive validity and construct validity. Content validity is assured when not only the items contain the common thread of the attitude under study, but between them they also cover the full range of the attitude, and cover it in a balanced way. Predictive validity and concurrent validity, are essentially the same but the first is concerned with how well the scale can forecast a future criterion and concurrent validity with how well it can describe a present one (Moser and Kalton, 1971). Construct validity involves relating a measuring instrument to an overall theoretical framework in order to determine whether the instrument is tied to the concepts and theoretical assumptions that are employed (Nachmias and Nachmias, 1981).

Oppenheim (1966) points out that the greater length and diversity of attitude scales make them more reliable than single questions, but even so, complete consistency is difficult to achieve.

The assessment of content validity is essentially a matter of judgement that may be made by the surveyor or better, by a team of judges engaged for the purpose. Moser and Kalton (1971) pointed out that the reliability and validity of a scale are always specific to a particular population, time and purpose, not invariant characteristics. Within educational research and the social sciences as a whole, the most commonly used scaled procedures have been the Likert, Guttman and Thurstone models with different functions and applicable in different situations. The surveyor took into account the above problems during questionnaire designing.

It was decided to send the questionnaire addressed to geography teachers to all state secondary schools in Continental Portugal. The questionnaire addressed to students was sent to a sample of state secondary schools in Continental Portugal. Because the districts are believed to differ markedly from each other with regard to the existing conditions in teaching geography, it was decided to do a stratified two-stage sample, selecting a number of schools at random from each district and from within each of these schools to select classes at random.

The pilot study

The pilot questionnaire was preceded by small 'pre-tests' on problems of design, specially concerning the advantages and disadvantages of including some questions and the question wording (namely to be able to change open questions into closed ones).

The first part of the pilot questionnaire addressed to teachers was filled in by the heads of geography from six state secondary schools; the second part was filled in by nineteen geography teachers from the same schools (three located in Lisboa, one in the suburbs of Lisboa and two in Braga - a capital town of a northern district).

The pilot questionnaire addressed to 9th year pupils was completed by eighty-nine pupils from two schools (one located in Lisboa and another in the suburbs of the city).

The pilot questionnaire addressed to 12th year students was filled in by forty-two students from two schools (both located in Lisboa). The schools were of different types, schools with all the secondary education years (from the 7th to the 12th year), or only with the 10th, 11th and 12th years (in the case of the 12th year

questionnaires), schools that prior to the unification of secondary education were either 'liceus' or 'technical schools' or new schools.

As a result of the pilot survey four alterations in the first part of the teachers' questionnaire were introduced: the format of the item concerning the type of school was modified and three new items were added: the first asking for the number of teachers by professional qualifications, another for the existence of a teacher in charge of teacher training and the third for the existence of a microcomputer in the school. Later the questionnaires' sponsor DGES advised the suppression of the items asking for the number of students by year and those asking for textbooks adopted in the school, by year (in order to prevent problems with the textbook publishers).

In the second part of the teachers' questionnaire some modifications were also introduced. An item was added asking whether a teacher was or was not in charge of teacher training, and other questions about the teachers' timetable (day classes, evening classes, day and evening classes); their participation and collaboration in in-service courses; their collaboration in curriculum development, and their previous teaching position (head of the department and in charge of teacher training). The questions concerning the teachers' academic and training qualifications were changed from open to semi closed ones. Five alterations in the list of teaching resources were also introduced. To reduce the length of the questionnaire, modifications were also introduced in the format of items concerning teaching methods and resources, as well as in items concerning the syllabuses (it also became necessary to change the wording of some of the questions about syllabuses). At the end of the pilot questionnaire one page was inserted inviting teachers to make comments and suggestions to improve the questionnaire. This page was not included in the main survey.

After introducing all the above alterations the researcher had an interview with three of the respondents in order to ask their opinion about the final version of the teachers' questionnaire.

The 9th year and 12th year students found the questionnaires easy to comprehend and complete, consequently no alterations were made to the 9th year pupils' questionnaire and only one change was made in the 12th year students' questionnaire. Another reason was added to those indicated in the item concerning the choice of geography in the 12th year. The pilot survey also confirmed the

possibility of students filling in the questionnaire in fifty minutes (a teaching period).

The pilot study also showed evidence of the advantage of having a survey sponsor, specially to increase the response rate and diminish the cost of the survey (see covering letter and pilot questionnaires, p. 427-461).

The Questionnaire Design

It has already been pointed out that the use of a self-administered questionnaire seemed the sole appropriate method of sampling a large number of teachers and students, especially because the population was scattered throughout the whole of Portugal (with the exception of Açores and Madeira).

This approach is considered to be relatively economical of time and money. Nevertheless, taking into account the number of questionnaires to print and the postage, it became necessary to ask support from the DGES. This support was given and consequently so was sponsorship of the questionnaire. Sponsorship was considered very important in order to have a good rate of response.

A covering letter was sent out with the questionnaires. In this letter it was explained why and by whom the survey was being undertaken (see Appendix D2, p. 462 and 465).

In order to raise the response rate to the teachers' questionnaires two follow-up letters were employed. The first consisted of a short reminder letter; the second consisting of a short letter together with the original letter, another copy of the first part of the questionnaire and another of the second part of the questionnaire. (Initially the number of questionnaires sent was equal to the number of geography teachers in the schools surveyed). (See p. 463-464).

To raise the response rate to the students' questionnaires a short reminder letter (see Appendix D2, p. 466) with the original letter were sent to schools which had not responded.

The questionnaires answers were to be treated as anonymous; this was made clear to the respondents.

The teachers' questionnaires were sent in June 1983 (because official

permission was given only on the 31st May). It was then too later to send the students' questionnaires because classes finished at the beginning of June (on the 9th June). These questionnaires were sent in the following year, 1984, in May because it was evident that students would not be competent to comment critically on the syllabuses unless of course, they had virtually completed the course of study.

An attempt was made to get information about the causes of non-response. In relation to the students' questionnaires, the heads of geography indicated some reasons: the most frequent was that in May teachers still had syllabus content to cover and assessment tests to give and they could not lose a period of teaching; two heads indicated that the teachers of the chosen classes had been absent from school due to illness; another two heads did not know the reasons. In relation to the teachers' questionnaires the most frequently indicated reason was the fact that the teacher was extremely busy; two teachers indicated they had been absent from school due to illness; four teachers said that they were not able to respond due to the fact they had no academic qualifications in geography; four other teachers, besides being very busy, argued that the questionnaire was too long.

Careful consideration was given to all aspects of question specification. The language was adapted to students' age. In fact the students' and teachers' questionnaires were easily comprehensible and were easily completed.

The questionnaire design utilized several formats, since both factual information and opinions and attitudes were sought. Some of factual questions lent themselves to a structured format, in which the respondent was asked to select only one of several possible replies. The possible responses were carefully considered but in many cases provision was made to permit respondents to indicate other significant facts. The second part of teachers' questionnaire as well the 9th year and 12th year students' questionnaires included open questions, to give opportunities for the respondents to express their opinions freely: the 9th year pupils questionnaire included two open questions; the 12th year students' questionnaire six open questions; the second part of the teachers' questionnaire included open questions in the sections concerning fieldwork and syllabuses. These open questions were placed at the end of the questionnaires and were successful in eliciting full responses.

In contrast to structured (or even semi-structured) questions, open questions were in some cases difficult to code and the codification demanded much time.

The final draft of the questionnaires asked for information and opinions as shown below:

Teachers questionnaire

(see Appendix D2, p. 467-478)

First part (addressed to the head of geography department)

First the questionnaire asked for the name and address of the establishment.

- Item 1. Asked for the type of establishment (with... years).
- Item 2. Asked for the number of students who chose geography in the 10th and 11th years (by 'areas of study') and in the 12th year (by courses).
- Item 3. Asked for the number of geography teachers with day classes, day and evening classes or only evening classes and the number of teachers by professional qualifications.
- Item 4. Asked for the existence or not of a teacher in charge of teacher training.
- Item 5. Asked for the number of specially equipped geography rooms; if the geography room(s) was or not only used for geography teaching and in a negative case the percentage of occupation of the specially equipped geography room by geography classes.
- Item 6. Asked for the departmental allowance.
- Item 7. Asked for the existence or not of a microcomputer in the school.

Second part (addressed to geography teachers)

First the questionnaire asked for the name and localization of the establishment.

Items 8., 9., 10., 11., 12., 13., 14., 15. The purpose of these items was to elicit factual information such as the age; sex; teaching position in the questionnaire year (head of geography, in charge of teacher training); academic qualifications; training qualifications; years in teaching; years in geography teaching; timetable in the questionnaire year (type, years and number of teaching hours per week); in-service training (participation and collaboration in in-service training and curriculum development); teaching position in previous years (head of geography, in charge of teacher training).

Item 16. This section attempted to determine the relative frequency with which an assortment of teaching strategies and assessment methods were used in geography classes (separately in the Unified General Course and in Complementary Course and 12th year). Nineteen methods were listed. Also given was the possibility of adding other (or others) teaching strategies or assessment methods. Teachers were asked to indicate the frequency with which they employed these methods by reference to a scale. The scale ranged from 'used one or more times per week', 'used fortnightly', 'used monthly', 'used quarterly', 'used yearly', until 'never used'.

Item 17. This section attempted to determine the relative frequency with which an assortment of teaching resources were used in geography classes (separately in the Unified General Course and in the Complementary Course and 12th year). Four different types of resources were listed: audio-visual equipment, maps, globe and photographs, meteorological equipment, and other resources. The possibility was given to add other(s) teaching resources. Teachers were asked to indicate the frequency with which they used the different teaching resources by reference to a scale. The scale was the same as that used in item 16, but the possibility was also given to indicate that a specific resource did not exist in the school.

Item 18. This section asked teachers their opinions about the need to undertake fieldwork; the difficulties they found and the

types and amount of fieldwork they undertook or they intended to undertake during the questionnaire year.

Three of the questions were open questions.

Item 19. This section asked teachers' opinions about geography syllabuses. The questions concerning the Unified General Course (7th, 8th and 9th years) were addressed to all teachers; those concerning the different 'áreas de estudo' ('areas of study') of the Complementary Course (10th and 11th years) or the 12th year were addressed to teachers who had already taught the respective syllabus of each year and 'área de estudo' ('area of study').

The section had open questions.

The questions concerning the Unified General Course were comments on:

- the special contributions of geography to the education of children that can justify its inclusion in the Unified General Course curriculum;
- the adequacy of geography syllabuses for pupils' needs;
- the structure and content of geography syllabuses and suggestions to ameliorate them;
- the main problems in geography teaching and suggestions to improve the teaching of the subject at Unified General Course level.

The questions concerning each one of the Complementary Course or 12th year syllabuses were comments on:

- the adequacy of geography syllabuses for students' needs and interests;
- the main problems in teaching the subject in the respective 'área de estudo' ('area of study') or course and suggestions on

how to ameliorate the geography syllabus or other innovations that could contribute to improving the geography teaching in the 'area' or course.

9th year pupils' questionnaire

(see Appendix D2, p. 479-482)

First the questionnaire asked for the name and localization of the establishment.

Items 1., 2., 3., 4. The purpose of these items was to elicit factual information, such as the age, sex, specialist area, and marks obtained in Portuguese, geography and mathematics in the third term of the 7th and 8th years.

Item 5. This item attempted to find the relative popularity of geography among the 9th year subjects. The questionnaire asked for a ranking response in which pupils were required to rank-order the 9th year subjects according to their preferences.

Items 6.1, 6.2. These items attempted to find the reasons why some pupils ranked geography among the first six subjects and others among the last five subjects. The questionnaire asked for a checklist response that required that the respondent selects three of the eight alternatives presented to him/her. The questionnaire had two different lists of eight alternatives: one addressed to pupils who placed geography among the first six subjects; another for those who placed geography among the last five places. The alternatives were nominal categories.

Item 6.3. This section attempted to determine the extent to which pupils enjoyed the study of different aspects of geography. Fifteen aspects were listed. Each aspect was to be rated by the pupils according to whether they enjoyed studying it or not. A three-point scale was used ranging from enjoyed it, to a neutral stance, to did not enjoy it. The negative endorsement was given the score of 1, the neutral stance a score of 2, and

the positive endorsement a score of 3.

Item 7. This item asked pupils for a definition of what geography is. It was an open question. From the responses to this question it was intended to find the concept of geography transmitted by teachers during geography classes.

Item 8. This item asked pupils to make comments on geography teaching and to make suggestions on how to improve it.

12th year students questionnaire

(see Appendix D2, p. 483-488)

First the questionnaire asked for the name and localization of the establishment.

Items 1., 2., 3. The purpose of these items was to elicit factual information such as the age, sex, academic background and the course and the other two subjects students were following. This would allow the researcher to know if geography was mainly combined with the humanities rather than with sciences and mathematics. This obviously may have repercussions on the geography curriculum organization.

Item 4.1. This section attempted to determine the most significant reasons for choosing geography in the 12th year. Eighteen statements, representing the most likely reasons to have influenced student choice were listed. Students were asked to rate the relative importance of each of these factors according to a five point scale. The scale ranged from negative endorsements, such as 'not important' and 'of little importance' to increasingly positive endorsements, such as 'important', 'very important' and 'of fundamental importance'. Each response was then weighted from 1 to 5. The negative responses were given the values of 1 or 2, whilst the positives responses were given the values of 3, 4 and 5. Provision was also made to permit students to specify and rate any other

factor which did not appear on the list but was significant to them.

Item 4.2. This section attempted to determine the extent to which students found the study of different aspects of geography interesting. Eighteen aspects were listed. Each aspect would then be rated by the students according to their interest in studying it. A four point scale was used ranging from 'no interest', 'little interest', 'sufficient interest', 'much interest'. The negative endorsement was given the score of 1, 'little' the score of 2, 'sufficient' the score of 3 and 'much' the score of 4. Provision was also made to permit students to specify and rate any other aspect which did not appear on the list.

Item 5. This item asked students for a definition of what geography is. From the responses to this question, it was intended to find the concept of geography transmitted by teachers during the geography classes.

Items 6.1., 6.2. These items asked for students suggestions on how to ameliorate geography teaching: firstly, in the 7th, 8th and 9th years, secondly in the 10th, 11th and 12th years. They were open questions.

Items 6.3., 6.4., 6.5. The purpose of this section was to ascertain how important (relevant) geographical knowledge seemed to the students in relation to their future day to day lives. First students were asked to rate how they felt, using a five point scale. The scale ranged from a negative extreme 'not important' to 'of fundamental importance'. Secondly the questionnaire asked students to indicate the reasons justifying their previous responses, these were open questions.

Item 7. This section asked students about their intended career plans. Item 7.1. consisted of a checklist of three possible career intentions: going on to study at University, going on to study at a Further Education establishment, going on to a job. Items 7.2. and 7.3. asked for students indicate the three first

preferences of courses or jobs they would like to go on to.

Item 8. This item asked students to make comments on geography teaching and give suggestions on how to improve it.

The Sample

It was stated above that it was decided to send the teachers' questionnaire to all state secondary schools. The heads of departments of 74.6% of the total of the schools filled in the first part of the questionnaire. The second part of the questionnaire was filled in by seven hundred and fifty-one teachers, from 71.8% of the total of the schools.

The 9th year pupils' questionnaires were sent to sixty-one schools (about 20.0% of the total number of secondary schools with 9th year). Two thousand two hundred and seventy-four pupils from fifty-five schools filled in the questionnaire. These corresponding to 90.2% of the initial number of sample schools.

The 12th year students' questionnaires were sent to forty-four schools. Eight hundred and sixty-nine students from thirty-eight schools filled in the questionnaire. These corresponded to 86.4% of the initial number of sample schools.

Analysis of the Data

The data collected by the questionnaire survey, before being processed by computer were edited (the questionnaires were scrutinized for errors, omissions and ambiguous classifications) and coded. The coding of open questions in some cases was difficult and time consuming.

The data was processed at the Institute of Education computing department. OPUS PC-II microcomputers acting as terminals were used. These are linked directly to the central facility in the Institute - a pyramid technology super mini running the UNIX operating system. The data was processed using SPSS-X (Statistical Package for the Social Sciences). Some recoding was necessary for the chi-squared analysis.

6.2 Findings of the Survey

6.2.1 Teachers' Questionnaires

6.2.2.1 First Part - The Secondary Schools

The questionnaires were sent to all state secondary schools in Continental Portugal. There were three hundred and sixteen schools and the heads of the geography departments ('delegados de disciplina') of two hundred and thirty-six schools filled in the first part of the questionnaire. These corresponded to a percentage of 74.6% of the total number of secondary schools. The distribution of the sample and of the population (the total number of state secondary schools in Continental Portugal) by district is present in Table 6.1.

Table 6.1 shows that there is a good degree of similarity between the sample and the population which affords confidence in the sampling concerning the distribution of schools by district, at least in its consistency.

The distribution of schools by type is shown in Table 6.2. This table shows that 39.8% of the schools had all the secondary education years (7th to 12th); 25.4% had only the Unified General Course (7th, 8th and 9th years); and 1.3% had only the 10th, 11th and 12th years. The others had four or five years of schooling, from the Unified General Course and from the Complementary Course and/or the 12th year. Sixty-two schools also had other types of courses, namely secondary education evening courses for adults.

The distribution of schools by the number of geography teachers who taught there is shown in Table 6.3. In these numbers teachers who taught day classes, day and evening classes or only evening classes are included. Among the schools forty had (one to four) teachers who taught only evening classes; and one hundred and twenty-five schools had (one to seven) teachers who taught both day and evening classes.

Table 6.1**Distribution of the sample and of the population by district
(Schools)**

Districts	Sample		Population
	F	%	%
Aveiro	24	10.2	8.5
Beja	7	3.0	2.2
Braga	13	5.5	4.7
Bragança	6	2.5	2.5
Castelo Branco	7	3.0	2.8
Coimbra	12	5.1	5.1
Évora	8	3.4	2.8
Faro	8	3.4	3.5
Guarda	7	3.0	2.5
Leiria	6	2.5	3.8
Lisboa	45	19.1	22.2
Portalegre	4	1.7	1.6
Porto	33	14.0	13.9
Santarém	15	6.4	5.4
Setúbal	13	5.5	7.3
Viana do Castelo	6	2.5	2.5
Vila Real	8	3.4	3.2
Viseu	14	5.9	5.4
Total	236	100.0	100.0

Source of population data: Ministério da Educação e Ciência, Direcção-Geral do Ensino Secundário

Table 6.2**Distribution of schools by type**

Type of school (schools with ... years)	F	%
7 th, 8 th & 9 th	60	25.4
7 th, 8 th, 9 th, 10 th, 11 th & 12 th	94	39.8
7 th, 8 th, 9 th & 10 th	4	1.7
7 th, 8 th, 9 th, 10 th & 11 th	43	18.2
7 th, 8 th, 9 th & 12 th	15	6.4
7 th, 8 th, 9 th, 10 th & 12 th	2	0.8
10 th, 11 th & 12 th	3	1.3
7 th, 8 th, 9 th, & 11 th	5	2.1
8 th, 9 th, 10 th, 11 th & 12 th	1	0.4
7 th, 8 th, 9 th, 11 th & 12 th	5	2.1
Not known	4	1.7
Total	236	100.0

Teachers qualifications

In secondary schools there were teachers with different qualifications:

1. Teachers with a degree in geographical sciences or in geography ('licenciatura' a four or five years course and 'bacharelato' a three years course) and teacher training ('professores profissionalizados').
2. Teachers with a degree in geographical sciences or in geography but who were undergoing the teacher training ('professores em formação em exercício').

Table 6.3**Distribution of schools by the number of geography teachers**

Number of geography teachers	Schools	
	F	%
1	19	8.1
2	40	16.9
3	33	14.0
4	34	14.4
5	24	10.2
6	19	8.1
7	20	8.5
8	10	4.2
9	13	5.5
10	5	2.1
11	1	0.4
12	5	2.1
13	3	1.3
Not known (a)	10	4.2
Total	236	100.0

(a) No answer or the total of teachers indicated, did not correspond to the total of teachers by qualifications.

3. Teachers with a degree in geographical sciences or in geography, but without teacher training ('professores com habilitação própria').
4. Teachers who did not complete a degree course in geography but who at least passed four certificates of one of the above courses ('3º escalão') or had qualifications considered as equivalent ('professores com habilitação suficiente').

5. Teachers with other qualifications. (Some teachers had only completed the secondary education course).

('Despacho Normativo 3/82 de 23 de Dezembro 1981 - Habilitações Próprias e Suficientes para a Docência nos Ensinos Preparatório e Secundário 1982/83').

An analysis of the qualification of teachers by schools shows evidence of some important features:

One hundred and forty-nine schools (63.1% of the schools sample) had at least one teacher with a degree in geography and with teacher training (qualification 1.); in contrast fifty-nine schools (25.0%) had no teacher with a degree in geography and with teacher training (qualification 1.).

Eighty-four schools (35.6%) had all teachers with a degree in geography (including teachers with teacher training, teachers undergoing teacher training and teachers without teacher training - qualifications 1, 2 and 3).

Twenty-one schools (8.5%) had all teachers with a degree in geography and teacher training (qualification 1); in contrast twenty-eight schools (11.8%) did not have any teacher with a degree in geography (they had only teachers with the type of qualifications 4 and 5).

Fourteen schools (5.9%) had only teachers with 'other qualifications' (qualification 5). It was already pointed out that among these teachers some had only completed a secondary education course.

The ideal situation would be to have all geography teachers with a degree in geography and with teacher training. Only 8.5% of the schools had all the teachers with these qualifications.

Table 6.4 shows the distribution by district of the best and worse situations: schools with all the geography teachers with the qualifications 1, 2 and 3 and between brackets those only with teachers with the qualification 1; schools only with geography teachers with the qualifications 4 and 5 and between brackets those only with teachers with the qualification 5.

Table 6.4 shows evidence that there are important differences in relation to geography teachers qualifications from district to district. Districts where the

Table 6.4

Distribution of schools according to geography teachers' professional qualifications by district

Districts	Schools with all geography teachers with a degree in geography (qualifications 1, 2 and 3)				Schools with all geography teachers without a degree in geography (qualifications 3 and 4)			
	F		% (c)		F		% (c)	
	(a)		(a)			(b)		(b)
Aveiro	(6)	19	(25.0)	79.1	-	-	-	-
Beja	-	-	-	-	4	(4)	57.1	(57.1)
Braga	(1)	3	(7.6)	23.0	-	-	-	-
Bragança	-	1	-	16.6	1	-	16.6	-
Castelo Branco	-	-	-	-	3	(2)	42.9	(28.5)
Coimbra	(4)	10	(33.3)	83.3	1	-	8.3	-
Évora	-	-	-	-	2	(2)	25.0	(25.0)
Faro	-	-	-	-	1	-	12.5	-
Guarda	-	4	-	57.1	1	-	14.3	-
Leiria	-	-	-	-	1	-	16.6	-
Lisboa	(4)	15	(8.8)	33.3	2	(1)	4.4	(2.2)
Portalegre	-	1	-	25.0	-	-	-	-
Porto	(2)	21	(6.0)	63.6	-	-	-	-
Santarém	(2)	4	(13.3)	26.6	4	(3)	26.7	(20.0)
Setúbal	-	1	-	7.6	3	-	23.1	-
Viana do Castelo	-	-	-	-	1	-	16.6	-
Vila Real	-	-	-	-	2	(1)	25.0	(12.5)
Viseu	(2)	5	(14.2)	35.7	2	(1)	14.3	(7.1)
Total	(21)	84			28	(14)		

(a) Between brackets schools only with geography teachers with a degree in geography and with teacher training (qualification 1).

(b) Between brackets schools only with geography teachers with other qualifications (qualification 5).

(c) Percentages in relation to the total number of sample schools of each district.

majority of schools had only geography teachers with a degree in geography - Aveiro, Coimbra, Guarda and Porto; districts where the majority of schools had only geography teachers without a degree in geography - Beja; districts where at least 25.0% of schools had only geography teachers with a degree in geography - Lisboa, Portalegre, Santarém and Viseu; districts where at least 25.0% of schools had only geography teachers without a degree in geography - Castelo Branco, Évora, Santarém and Vila Real; the district of Santarém had at least 25.0% of the schools in both situations.

This problem will be analysed in greater depth through analysing the teachers' questionnaires.

In the fifty-one schools with teachers undergoing teacher training, only thirty-seven had a teacher in charge of teacher training 'delegado'. In order to undertake an effective teacher training each of these schools should have a teacher in charge of teacher training ('delegado'). They received only support from the 'orientador pedagógico' who visited the school regularly (see Chapter 5, p. 177).

Geography rooms

The questionnaire also asked for the number of specially equipped geography teaching rooms and if these rooms were exclusively used for geography teaching. The results are presented in Table 6.5.

The distribution of schools with specially equipped geography teaching room(s) by district is presented in Table 6.6.

Table 6.6 shows evidence that districts such as: Coimbra, Évora, Faro, Leiria, Portalegre, Porto had 50.0% or more schools with a specially equipped geography teaching room. In contrast in all other districts less than 50.0% of the schools had a specially equipped geography teaching room.

Only twenty-eight schools (11.9%) used the geography room(s) exclusively for geography teaching. Those that had an equipped room for geography teaching and did not use it exclusively for that purpose indicated the following percentages of use: 0-19% of the time - 10 schools (10.9%); 20-29% of the time - 15 schools (16.3%); 40-59% of the time - 18 schools (19.6%); 60-79% of the time - 24 schools (26.1%); more than 80% of the time - 25 schools (27.2%).

Table 6.5**Schools with specially equipped geography teaching room(s)**

Number of equipped geography teaching rooms	F	%
3	1	0.4
2	11	4.7
1	85	36.0
0	111	47.0
Others (a)	10	4.2
Not known	18	7.6
Total	236	100.0

(a) Schools that had a room used for geography teaching but was not specially equipped for this purpose.

Department allowance

The questionnaire also asked for the departmental allowance of the previous year before the survey. The departmental allowances were the following: fifty-one schools (21.6%) indicated they did not receive any amount of money; thirty-eight schools (16.1%) between 1,500 and 5,000 escudos; thirty-three schools (14.0%) between 5,100 and 10,000 escudos; ten schools (4.2%) between 10,500 and 15,000 escudos; seven schools (3.0%) between 16,000 and 20,000 escudos; nine schools (3.8%) between 21,413 and 85,000 escudos. Eighty-eight schools (37.3%) did not answer to this question.

Note - one pound then corresponded approximately to 179 escudos.

Microcomputer

To the question: Is there or not a microcomputer in the school? Ten schools answered yes (4.2%); two hundred and seven answered no (87.7%); and nineteen did not answered (8.1%).

Table 6.6

**Schools with specially equipped geography
teaching room(s) by district**

Districts	Schools with specially equipped geography teaching room(s)	% in relation to the total of sample schools of each district
Aveiro	8	33.3
Beja	3	42.9
Braga	4	30.8
Bragança	2	33.3
Castelo Branco	3	42.9
Coimbra	8	66.7
Évora	4	50.0
Faro	6	75.0
Guarda	1	14.3
Leiria	4	66.7
Lisboa	18	40.0
Portalegre	3	75.0
Porto	20	60.6
Santarém	5	33.3
Setúbal	3	23.1
Viana do Castelo	1	16.7
Vila Real	2	25.0
Viseu	2	14.3
Total	97	

Teachers from two hundred and twenty-seven schools answered the second part of the questionnaire addressed to all geography teachers. The number of teachers from the same school varied from one to eleven.

The questionnaire showed evidence of the differences between schools: type, size, teachers' qualifications and equipment (geography room) and some differences from district to district. In fact the situation was different from district to district, and from school to school. The majority of these aspects will be analysed in greater depth in dealing with the teachers questionnaire.

Obviously all these aspects have implications for geography teaching development: specially teachers' qualifications, the lack of specially equipped rooms for geography teaching, the insufficiency of departmental allowances.

6.2.2.2 Second Part - The Teachers

The questionnaires were sent out to all secondary state schools. Seven hundred and fifty-one geography teachers from two hundred and twenty-seven schools filled in the questionnaire. This corresponded to 50.1% of the population, from 71.8% of the total number of secondary schools. The distribution of the sample and of the population by district is presented in Table 6.7 (see Note 1).

Table 6.7 shows that there is quite a good degree of similarity between the sample and the population, something which affords confidence in the sampling concerning the distribution of geography teachers by district, at least in its consistency.

I - About the Teacher

Age of the Sample

The distribution of teachers by age is presented in Table 6.8.

Table 6.8 shows that more than 50.0% of teachers were less than thirty-two years old. In the previous chapter it was pointed out that the quickly increasing number of secondary education students in the seventies and eighties led to the need to appoint young people, often without a degree in geography, to a teaching

Table 6.7

Distribution of the sample and of the population
(the total number of geography teachers from state
secondary schools) by district

Districts	Sample		Population	
	F	%	F	%
Aveiro	61	8.1	88	5.9
Beja	21	2.8	24	1.6
Braga	50	6.7	81	5.4
Bragança	17	2.3	29	1.9
Castelo Branco	16	2.1	33	2.2
Coimbra	45	6.0	74	4.9
Évora	20	2.7	28	1.9
Faro	36	4.8	57	3.8
Guarda	19	2.5	25	1.7
Leiria	17	2.3	50	3.3
Lisboa	171	22.8	432	28.8
Portalegre	9	1.2	18	1.2
Porto	126	16.8	252	16.8
Santarém	43	5.7	73	4.9
Setúbal	42	5.6	136	9.1
Viana do Castelo	17	2.3	24	1.6
Vila Real	13	1.7	28	1.9
Viseu	28	3.7	46	3.1
Total	751	100.0	1 498	100.0

Source of population data: Ministério da Educação e Ciência, Direcção-Geral do Ensino Secundário

Table 6.8**Distribution of teachers by age**

Age	F	%	Valid %	Cumulative %
19 - 21	16	2.1	2.2	2.2
22 - 31	393	52.3	54.1	56.3
32 - 41	223	29.7	30.7	86.9
42 - 51	58	7.7	8.0	94.9
52 - 68	37	4.9	5.1	100.0
Not known	24	3.2	missing	
Total	751	100.0	100.0	

post. It was also pointed out that since the middle of the seventies there was a growing number of students enrolling for geography courses in University, consequently there was also a growing number of graduates in geography who started teaching in secondary schools without teacher training. Nevertheless, the number of graduates in geography was not enough to occupy all the secondary education vacancies.

A cross-tabulation was done between the variables district and teachers' age. The results are presented in Table 6.9.

Table 6.9 shows evidence that in the districts of Beja, Braga, Bragança, Évora, Faro, Lisboa, Santarém, Setúbal, Viana do Castelo, Vila Real and Viseu more than 50.0% of the teachers were thirty-one years old or less; on the contrary in the districts of Aveiro, Castelo Branco, Coimbra, Guarda, Portalegre and Porto more than 50.0% of the teachers were thirty-two years old or more; in the district of Leiria 50.0% were thirty-one years old or less and 50.0% were thirty-two years old or more.

Table 6.9**Distribution of teachers' age by district**

Districts	Age					
	< 22	22 - 31	32 - 41	42 - 51	52 - 68	Total
	%	%	%	%	%	%
Aveiro	1.7	47.5	40.7	6.8	3.4	100.0
Beja	-	66.7	19.0	4.8	9.5	100.0
Braga	6.1	57.1	24.5	8.2	4.1	100.0
Bragança	-	76.5	17.6	5.9	-	100.0
Castelo Branco	13.3	33.3	13.3	26.7	13.3	100.0
Coimbra	-	35.7	45.2	9.5	9.5	100.0
Évora	5.3	68.4	15.8	10.5	-	100.0
Faro	-	60.0	25.7	11.4	2.9	100.0
Guarda	5.6	33.3	50.0	-	11.1	100.0
Leiria	-	50.0	37.4	6.3	6.3	100.0
Lisboa	0.6	52.1	30.3	10.9	6.1	100.0
Portalegre	-	44.4	55.6	-	-	100.0
Porto	-	48.4	36.1	7.4	8.2	100.0
Santarém	4.8	61.9	28.6	4.8	-	100.0
Setúbal	10.0	65.0	17.5	7.5	-	100.0
Viana do Castelo	-	88.2	11.8	-	-	100.0
Vila Real	7.7	76.9	15.4	-	-	100.0
Viseu	-	57.1	35.7	3.6	3.6	100.0

Note - The percentages were calculated in relation to the total number of responses.
The age of 24 teachers was not known.

Sex of the SampleTable 6.10

The distribution of teachers by sex is presented in Table 6.10.

In all districts the percentage of women were superior to men, with the exception of the districts of Beja and Castelo Branco (where the percentages of men were respectively 52.4% and 56.3%). In the district of Viana do Castelo all the respondents were women.

Distribution of teachers by sex

Sex	F	%
M	177	23.6
F	567	75.5
Not known	7	0.9
Total	751	100.0

Qualifications

The distribution of teachers by academic qualifications is presented in Table 6.11.

Table 6.11Distribution of teachers by academic qualifications

Academic qualifications	F	%
'Licenciatura' in geography	519	69.1
'Bacharelato' in geography	39	5.2
No degrees in geography	187	24.9
Not known	6	0.8
Total	751	100.0

'Licenciatura' - a five year course and since 1978 a four year course.

'Bacharelato' - a three year course.

About one quarter of the teachers had no degree in geography. To be able to follow a teacher training course it is compulsory to have a degree in geography ('licenciatura' or 'bacharelato').

A cross-tabulation was done between the variables teachers' academic qualifications and age. The results are presented in Table 6.12.

Table 6.12

Cross-tabulation
Teachers' academic qualifications by age

Academic qualifications	Age										
	19 - 21		22 - 31		32 - 41		42 - 51		52 - 68		Not known
	F	%	F	%	F	%	F	%	F	%	F
'Licenciatura' in geography	0	0.0	241	62.1	191	85.6	47	81.0	21	56.8	19
'Bacharelato' in geography	0	0.0	13	3.4	22	9.9	3	5.2	1	2.7	-
No degrees in geography	15	100	134	34.5	10	4.5	8	13.8	15	40.5	5
Not known	-	-	-	-	-	-	-	-	-	-	6
Total	15	100	388	100	223	100	58	100	37	100	30

Table 6.12 shows evidence that more than one third of teachers below thirty-two years old had no degree in geography. There is also a large percentage of teachers between fifty-two and sixty-eight years old without a degree in geography. Some of these teachers had a degree in Biological Sciences. In the previous chapter it was indicated that until the Preparatory Cycle was created in 1967/68, the teaching of geography was linked to that of Natural Sciences in the two first years of secondary education. Teachers with a degree in Biological Sciences went on teaching geography even after the separation of the two subjects prescribed in 1967/68.

One hundred and eighty-seven teachers had no degree in geography, but among these, sixty-five (34.8%) had a degree in other courses: forty in Economics, Social Sciences or Humanities; twenty-three in Biological Sciences courses; two in other courses.

Ninety-four teachers were still studying: forty-six - geography or geography

and regional planning; forty-five - economics, social sciences, law, administration or humanities; three - other courses.

The questionnaire asked for those without a degree in geography to indicate if they already had any certificate in geography at higher education level. Sixty-two (33.2%) had already one to eighteen geography certificates at higher education level: twenty-six - between one and five; twelve - between six and ten; twenty-one - between eleven and fifteen; three - between sixteen and eighteen. One hundred and twenty-five teachers (16.6% of the sample) had not studied geography at higher education level.

The questionnaire also asked for teachers without a degree in geography or any other higher education degree to indicate their academic qualifications; thirty-one had a further education course; sixteen had the 12th year (or the equivalent) and twenty-four the 11th year (or the equivalent). (Those with the 12th or 11th years corresponded to 5.3% of the sample).

The questionnaire also asked for the Pedagogical Sciences course which was compulsory to do the teacher training until the seventies. One hundred and fifty-nine teachers (21.2% of the sample) responded they had done it.

The questionnaire also asked for the training qualifications of teachers: three hundred and sixty-five teachers (48.6%) responded they had done teacher training; three hundred and forty-one (45.4%) responded they had not done teacher training. At the time teacher training lasted two school years; thirty-six teachers (4.8%) were in the first or second year of their teacher training. Nine teachers (1.2%) did not answer this question.

In Table 6.13 a comparison is shown between the professional (academic and training) qualifications of the sample and those of the population of geography teachers as a whole.

A cross-tabulation was done between the variables district and teachers' academic qualifications. The results are shown in Table 6.14.

Table 6.14 shows that the districts of Aveiro, Braga, Bragança, Castelo Branco, Coimbra, Faro, Guarda, Leiria, Lisboa, Portalegre, Porto, Santarém and Viseu had more than 50.0% of teachers with an academic degree in geography; in contrast the districts of Beja, Évora, Setúbal, Viana do Castelo and Vila Real had less than 50.0% of graduate teachers in geography.

Table 6.13

**Distribution of the sample and of the population
by professional qualifications
(Teachers)**

Teachers' professional qualifications	Sample		Population	
	F	Valid %	F	%
Teachers with a degree in geography and with teacher training (a)	365	49.2	608	40.6
Teachers with a degree in geography but without teacher training (b)	229	30.9	513	34.2
Teachers without a degree in geography and without teacher training (c)	148	19.9	377	25.2
Not known	9	missing	-	-
Total	751	100.0	1 498	100.0

(a) 'Professores Profissionalizados'.

(b) 'Professores Eventuais com Habilitação Própria'.

(c) 'Professores Eventuais sem Habilitação Própria'.

Source of population data: Ministério da Educação e Ciência, Direcção-Geral do Ensino Secundário (see Note 2)

A chi-squared testing of independence between the same variables was also done. The test was significant at 99% level. This shows that the association between districts and the qualifications of teachers could not have occurred by chance.

A cross-tabulation was done between the variables district and training qualifications. The results are presented in Table 6.15.

Table 6.15 shows evidence that in the districts of Aveiro, Braga, Coimbra, Faro, Guarda, Leiria, Lisboa, Portalegre, Porto and Viseu more than 50.0% of the sample had completed their teacher training; however in the districts of Beja, Bragança, Castelo Branco, Évora, Santarém, Setúbal, Viana do Castelo and Vila Real less than 50.0% of teachers had completed their teacher training. With the exception of Castelo Branco and Santarém this percentage was even inferior to 25.0%.

Table 6.14**Distribution of teachers' academic qualifications by district**

Districts	Academic qualifications					
	Teachers with a degree in geography		Teachers without a degree in geography		Total	
	F	%	F	%	F	%
Aveiro	55	90.2	6	9.8	61	100.0
Beja	7	33.3	14	66.7	21	100.0
Braga (a)	43	87.8	6	12.2	49	100.0
Bragança	9	52.9	8	47.1	17	100.0
Castelo Branco	12	75.0	4	25.0	16	100.0
Coimbra	41	91.1	4	8.9	45	100.0
Évora	6	30.0	14	70.0	20	100.0
Faro (a)	23	65.7	12	34.3	35	100.0
Guarda (a)	15	83.3	3	16.7	18	100.0
Leiria	15	88.2	2	11.8	17	100.0
Lisboa (a)	134	78.8	36	21.2	170	100.0
Portalegre (a)	7	87.5	1	12.5	8	100.0
Porto	110	87.3	16	12.7	126	100.0
Santarém	29	67.4	14	32.6	43	100.0
Setúbal (a)	17	41.5	24	58.5	41	100.0
Viana do Castelo	7	41.2	10	58.8	17	100.0
Vila Real	6	46.2	7	53.8	13	100.0
Viseu	22	78.6	6	21.4	28	100.0
Total	558	-	187	-	745	

(a) The percentages were calculated in relation to the total number of responses. The academic qualifications of one teacher from the districts of Braga, Faro, Guarda, Lisboa, Portalegre and Setúbal were not known.

Table 6.15**Distribution of teacher training qualifications by district**

Districts	Teachers with teacher training		Teachers undergoing teacher training		Teachers without teacher training		Total	
	F	%	F	%	F	%	F	%
Aveiro	38	62.3	1	1.6	22	36.1	61	100.0
Beja	3	14.3	-	-	18	85.7	21	100.0
Braga	29	58.0	3	6.0	18	36.0	50	100.0
Bragança	3	17.6	1	5.9	13	76.5	17	100.0
Castelo Branco	7	43.8	1	6.3	8	50.0	16	100.0
Coimbra	33	73.3	6	13.3	6	13.3	45	100.0
Évora (a)	4	21.1	-	-	15	78.9	19	100.0
Faro (a)	19	55.9	1	2.9	14	41.2	34	100.0
Guarda (a)	10	55.6	-	-	8	44.4	18	100.0
Leiria (a)	9	56.3	-	-	7	43.8	16	100.0
Lisboa (a)	86	50.6	6	3.5	78	45.9	170	100.0
Portalegre	5	55.6	2	22.2	2	22.2	9	100.0
Porto (a)	73	58.9	9	7.3	42	33.9	124	100.0
Santarém	19	44.2	5	11.6	19	44.2	43	100.0
Setúbal (a)	8	19.5	1	2.4	32	78.0	41	100.0
Viana do Castelo	3	17.6	-	-	14	82.4	17	100.0
Vila Real	1	7.7	-	-	12	92.3	13	100.0
Viseu	15	53.6	-	-	13	46.4	28	100.0
Total	365	-	36	-	341	-	742	100.0

(a) The percentages were calculated in relation to the total number of responses. The training qualifications of one teacher from the districts of Évora, Guarda, Leiria, Lisboa and Setúbal and of two teachers from the districts of Faro and Porto were not known.

Number of Years in Teaching

The questionnaire also asked for the number of years in teaching and in geography teaching. The results concerning years in geography teaching are presented in Table 6.16.

Table 6.16

Years in geography teaching

Years in teaching	F	%	Valid %	Cumulative %
0 - 6	449	59.8	62.7	62.7
7 - 10	126	16.8	17.6	80.3
11 - 16	93	12.4	13.0	93.3
17 - 20	18	2.4	2.5	95.8
21 - 40	30	4.0	4.2	100.0
Not known	35	4.7	missing	
Total	751	100.0		

Mean = 9.8

Mode = 6.0

Median = 6.0

About 59.8% of teachers have six or less years in geography teaching and about 76.6% ten or less years in geography teaching. The average of years in geography teaching was 9.8 but the mode and median were equal to 6.0. This table also shows evidence of the facts already mentioned on pages 177 and 222.

In many cases teachers had in previous years taught subjects other than geography in secondary education or had taught at other education levels (such as in the Primary or in the 'Preparatory Cycle'). So the average total of years in teaching was 11.

A cross-tabulation was done between the variables years and district in geography teaching. The results are presented in Table 6.17.

Table 6.17 shows evidence that in the districts of Aveiro, Beja, Braga,

Table 6.17**Distribution of years in geography teaching by district**
(in %)

Districts	Years in teaching					
	0 - 6	7 - 10	11 - 16	17 - 20	>20	Total
Aveiro	50.9	26.3	19.3	1.8	1.8	100.0
Beja	85.0	5.0	10.0	-	-	100.0
Braga	67.3	10.2	10.2	4.1	8.2	100.0
Bragança	100.0	-	-	-	-	100.0
Castelo Branco	62.5	12.5	6.3	-	18.8	100.0
Coimbra	46.5	14.0	30.2	2.3	7.0	100.0
Évora	94.1	5.9	-	-	-	100.0
Faro	61.1	19.4	11.1	-	8.3	100.0
Guarda	44.4	38.9	5.6	5.6	5.6	100.0
Leiria	50.0	37.5	-	6.3	6.3	100.0
Lisboa	56.8	21.0	12.3	4.9	4.9	100.0
Portalegre	37.5	25.0	25.0	12.5	-	100.0
Porto	54.8	20.2	18.5	2.4	4.0	100.0
Santarém	70.0	15.0	15.0	-	-	100.0
Setúbal	85.4	7.3	7.3	-	-	100.0
Viana do Castelo	87.5	12.5	-	-	-	100.0
Vila Real	91.7	8.3	-	-	-	100.0
Viseu	76.0	12.0	8.0	-	4.0	100.0

Note - The percentages were calculated in relation to the total number of responses.
The years in teaching of 35 teachers were not known.

Bragança, Castelo Branco, Évora, Faro, Lisboa, Porto, Santarém, Setúbal, Viana do Castelo, Vila Real and Viseu more than 50.0% of teachers had six or less years in geography teaching, and in districts of Beja, Bragança, Évora, Santarém, Setúbal, Viana do Castelo, Vila Real and Viseu that percentage was superior to 70.0%; on the contrary, in the districts of Coimbra, Guarda and Portalegre more than 50.0 % of teachers had seven years or more in geography teaching; in the district of Leiria about 50.0% of teachers have six years or less in geography teaching and about 50.0% have seven years or more in geography teaching.

One hundred and sixty-four respondents (21.8%) were heads of geography departments ('delegados de disciplina') and three hundred and thirteen respondents (41.7%) had been heads of departments in previous years. In Portugal, since the school year 1974/75, the heads of departments are chosen by the teachers of each department and are in charge during a variable number of years.

Forty-seven teachers (6.3%) were in charge of teacher training ('delegados pedagógicos') and fifty-five teachers (7.3%) had been previously in charge of teacher training.

Only fifteen teachers (1.9%) had already participated in curriculum development, elaboration of new syllabuses, collaboration in in-service training courses or in evaluation processes. Ten teachers had written textbooks or produced other teaching materials.

One hundred and twenty-five teachers (16.6%) had already attended in-service courses (the number varied from 1 to 11 courses). The in-service courses, that last one or more days, were concerned with: different aspects of geography; presentation of new syllabuses; teaching or evaluation methods; introduction of new technologies; educational aspects and so on. Teachers also quoted study visits to observe different areas of Portugal. These courses were mainly organized by the ME (DGES), which often asked the collaboration of Universities, but some were also organized by teachers in charge of supervising teacher training, or by the schools where teacher training was taking place (often due the initiative of teachers undergoing teacher training). Trade unions also took the initiative of organizing in-service courses.

Teaching periods per week

75.6% of the sample had only day classes; 18.2% day and evening classes and 5.7% only evening classes.

The number of periods of teaching per week (day classes) varied from two to thirty. The number of periods of teaching varies according to the teacher's qualifications and years in teaching (22, 20 and 18). Heads of departments, teachers in charge of teacher training, teachers in charge of one class or belonging to the school's Directive Council (Conselho Directivo), teachers undergoing teacher training, teachers with evening classes and in other cases, have a reduction in time spent in teaching. Some teachers taught a small number of teaching periods of geography because they were mostly teaching other subjects.

Each teaching period lasts 50 minutes. The number of periods per week ascribed for geography teaching varies according to the year (7th and 9th years - 2 p./week; 8th year - 3 p./week; 10th year - 'area of study' A - 3 p./week; 10th year - 'area of study' C - 2 p./week; 11th year - 'area of study' C - 3 p./week; 10th or 11th years - 'area of study' D - 3 p./week; 12th year - 4 p./week).

Teachers who teach years with a time ascribed of 2 p./week can teach nine, ten or more classes and have more than three hundred pupils. Teachers usually teach one, two or three different years and among the sample there was even seven teachers with four different levels. Besides geography fifty-six teachers were teaching another subject, one teacher, two other subjects and one teacher, three other subjects, such as: thirty-one - sciences of the environment (in the evening classes); twenty - anthropology; three - cartography. The other subjects were: history, mathematics, commerce, public administration, law and public relations.

The questionnaire also asked for the years and 'areas of study' teachers were teaching geography. Table 6.18 shows the number of teachers teaching the different years and 'areas of study'.

These findings have important implications for geography teaching development: specially the big percentages of teachers without adequate academic and training qualifications and the lack of teaching experience of many teachers were serious obstacles.

However, the arrival of young graduates in geography into the profession who already have contact with the new developments in geographical science and

Table 6.18**Number of teachers teaching the different years
and 'areas of study' (áreas de estudo)**

Years	'Area of study'	Number of teachers
7th		404
8th		460
9th		378
11th	A	69
10th	C	7
11th		5
10th or 11th	D	82
12th		109

Note - The great majority of teachers teach more than one year.

the fact that more than 50.0% of the teachers are less than thirty-two years old are favourable factors to curriculum development and to the adoption of innovations in geography teaching. These aspects will be developed later.

The results of the survey showed clearly the inequalities in provision for geography teaching from district to district. Some of the differences between districts are presented in Table 6.19.

Table 6.19 shows evidence of the inequalities from district to district, specially the opposition between the districts of Aveiro, Braga, Coimbra, Faro, Guarda, Leiria, Lisboa, Portalegre, Porto and Viseu where more than 50.0% of teachers have the necessary adequate academic and training qualifications and the other districts specially Beja, Évora, Setúbal, Viana do Castelo and Vila Real where teachers have few qualifications.

In Chapter 2 evidence was shown of the opposition between western regions of Portugal, 'coastal regions' and eastern regions 'the interior'.

Until the present moment all the universities preparing students for geography teaching are located in the Coastal area: Lisbon, Coimbra, Porto. Young bachelor's

Table 6.19

Districts' Inequalities
(Schools and Teachers)

Districts	Districts with more than 50% of schools with one or more specially equipped geography teaching room	Districts with more than 50% of teachers with an academic degree in geography	Districts with more than 50% of teachers with teacher training	Districts with 50% or more of teachers with seven or more years in geography teaching	Districts with 50% or more of teachers aged thirty two or more years old
Aveiro	-	yes	yes	-	yes
Beja	-	-	-	-	-
Braga	-	yes	yes	-	-
Bragança	-	yes	-	-	-
Castelo Branco	-	yes	-	-	yes
Coimbra	yes	yes	yes	yes	yes
Évora	yes	-	-	-	-
Faro	yes	yes	yes	-	-
Guarda	-	yes	yes	yes	yes
Leiria	yes	yes	yes	yes	yes
Lisboa	-	yes	yes	-	-
Portalegre	yes	yes	yes	yes	yes
Porto	yes	yes	yes	-	yes
Santarém	-	yes	-	-	-
Setúbal	-	-	-	-	-
Viana do Castelo	-	-	-	-	-
Vila Real	-	-	-	-	-
Viseu	-	yes	yes	-	-

who lived in big cities for a certain number of years are not attracted to going or even going back to the interior, where cultural and recreational resources are few, where the probabilities of finding a job outside the teaching profession are weak and where social control is stronger.

Schools of the interior are obliged to appoint teachers without adequate academic and training qualifications who have not the dynamism and knowledge to introduce innovations in geography teaching (namely of organizing a specially equipped geography room).

Portalegre appears as a favoured district in relation to other districts of the interior regions (in fact was the district of the interior with the greatest percentage of the population employed in the tertiary sector of the economy); on the contrary Setúbal and Viana do Castelo appeared as unfavoured ones in the coastal area of Portugal. The first with a large percentage of rural population, the second with a large percentage of workforce in industry which was facing serious problems of decline seemed unattractive for young bachelors.

II - Teaching Strategies. Evaluation. Methods and Resources

The questionnaire asked for the teaching strategies and evaluation methods teachers used in geography classes. A structure format was used in which the respondent was asked to indicate her/his frequency of use of a range of teaching strategies and evaluation methods (in the Unified General Course - 7th, 8th and 9th years and in the 10th, 11th and 12th years). The list of teaching strategies and evaluation methods was carefully considered but was not exhaustive, so provision was made to permit teachers to specify and rate any other aspect which did not appear on the list but were relevant to them.

The scale used in this item was:

- 1 - once or more times per week
- 2 - once per fortnight
- 3 - once per month
- 4 - once per term
- 5 - once per year
- 6 - never

Teachers were asked to rate the relative use of each of the strategies and methods according to the scale.

Note: The letters between () correspond to the order of strategies and methods presented in the questionnaire. (See questionnaire schedule in Appendix D2, p. 467-478).

In the Unified General Course (7th, 8th and 9th years) the frequency of use of the different teaching strategies was the following one:

Teaching strategies predominantly used one or more times per week (in descending order of use):

- (d) The teacher talks with pupils (the teacher talks, pupils respond), and pupils make notes, do diagrams, draw maps.
- (c) The teacher talks with pupils (the teacher talks, pupils respond) and pupils make notes.
- (b) The teacher talks, pupils make notes, do diagrams, draw maps.
- (a) The teacher talks, pupils make notes.

Teaching strategies predominantly used monthly or fortnightly (in descending order of use):

- (h) The teacher proposes an individual practical work to be done in the classroom (for instance: map reading, graph construction), followed by a whole class discussion of the results.
- (l) The teacher makes use of slides, pupils make notes, followed by a whole class discussion.

Teaching strategies predominantly used quarterly (in descending order of use):

- (g) The teacher proposes work to be done by small groups of pupils in the classroom. Group oral reports are followed by a whole class discussion.
- (i) The teacher proposes practical work to be done by small groups of pupils in the classroom, followed by a whole class discussion.

- (f) The teacher proposes individual work to be done in the classroom. The presentation of oral reports is followed by a whole class discussion.

Teaching strategies predominantly used yearly or never:

- (k) A small group of pupils prepares a topic outside the classroom. Its presentation is followed by a whole class discussion.
- (j) One pupil prepares a topic outside the classroom. Its presentation is followed by a whole class discussion.
- (n) The teacher sets students an open ended enquiry (i.e. students make decisions, teacher advises, end result not known). Whole class discussion of the results.
- (m) The teacher involves pupils in a geographical classroom game or simulation.

Teaching strategy predominantly never used.

- (e) The teacher dictates notes.

The most frequent teaching strategies used in geography classes are consequently teacher talks but asks the oral participation of the pupils and asks them to do some practical work (map reading, draw of diagrams, construction of graphs...). Other teaching strategies often used are namely individual work and group work.

The teaching strategies used by teachers in the 10th, 11th and 12th years in descending order of use did not differ appreciably from those used in the Unified General Course. Fewer teachers answered the question concerning the 10th, 11th and 12th years because many teachers only taught the Unified General Course.

The evaluation methods used by teachers in the Unified General Course did not differ appreciably from those used in the Complementary Course and 12th year. In descending order of use were:

- (o) The teacher sets a written test without the help of books and/or notes, at a date which had previously been fixed.
- (s) The teacher sets a practical assignment (for instance: map reading, graph interpretation and so on).

- (q) The teacher sets a written test, without the help of books and/or notes, whose date was not previously fixed.

The other methods are never or only occasionally used by the majority of teachers:

- (p) The teacher sets a written test with the help of books and/or notes, whose date had previously been fixed.
- (r) The teacher sets a written test with the help of books and/or notes, whose date was not previously fixed.

Some teachers also suggested the use of oral tests.

Other teachers specified the use of pre-tests, formative and summative tests and assessment done by pupils (their own and of their colleagues). Other teachers indicated the use of checking forms or lists.

Two chi-squared tests of independence between two paired variables were done: academic qualifications by use of teaching strategies and evaluation methods; and training qualifications by use of teaching strategies and evaluation methods (see Appendix D3, Tables D3.1 and D3.2, p. 491-496).

Significant features of these tests seem to indicate that teachers with a degree in geography and with teacher training or who were undergoing the teacher training used more frequently than teachers without a degree in geography and without teacher training, teaching strategies that demand a more active learning, thus students' participation. Teachers without a degree in geography and without teacher training used more frequently than teachers with a degree in geography and with teacher training or who were undergoing teacher training, teaching strategies based on the transmission of knowledge by the teacher.

Teaching Resources

The questionnaire also asked for the resources teachers used for teaching. A structured format was used in which the teacher was asked to indicate her/his frequency of use of a range of teaching resources (in the Unified General Course and in the Complementary Course and 12th year). The list of resources was extensive but a possibility was given to teachers to specify and rate other resources.

The scale was the same as that used for the teaching and assessment methods but provision was also made to permit teachers to indicate that one specific resource was not available in their schools.

The resources were grouped in four categories: audio-visual equipment, maps, globes and photos; meteorological equipment and other equipment.

Teachers were asked to rate the relative use of each of the resources according to the scale.

The resources most frequently used in the Unified General Course were the following ones:

Audio-visual equipment

The most used was the overhead projector that was used once or more times per week or once per fortnight by 42.2% of the teachers.

The second most used audio-visual equipment was the slide projector.

Other audio-visual equipment was only occasionally used by the majority of teachers or was not available in schools, such as film-projector, TV and Video.

Maps, globes and photos

Plans, ordnance survey maps, small scale maps, transparencies, photocopies of maps, atlases, the globe, were frequently used in classes.

Other maps were rarely used or were not available in a large percentage of schools.

Some teachers indicated they used the photos of textbooks and of other books, as well as their own photos for teaching purposes.

Meteorological equipment

This was obviously mainly used when a class was studying climatology.

Nevertheless large percentages of teachers indicate that this equipment was not available in their schools.

Synoptic maps were frequently used in schools, where they were available.

Other equipment

The compass, as well as samples of rocks were frequently used when the topics under study demanded them.

The resources used in the 10th, 11th and 12th years did not differ significantly from those used in the Unified General Course but obviously varied according to the topic being studied: physical geography (11th year 'area of study' A) or human and economic geography ('areas of study' C and D and 12th year).

Nevertheless plans, ordnance survey maps, atlases, globes, compasses, samples of rocks and minerals were less frequently used than in the Unified General Course. In contrast, statistical data tables were used more frequently than in the Unified General Course.

In the 10th, 11th and 12th years teachers used the overhead projector, transparencies and photocopies of maps, small scale maps, statistical data, calculators and slide projectors and in the case of physical geography according to the topics other equipment. The most frequently used are again the synoptic maps.

The equipment available varies very much from school to school and the use of teaching resources from teacher to teacher.

Two chi-squared tests of independence between two paired variables were done: academic qualifications by use of teaching resources and training qualifications by use of teaching resources (see Appendix D3, Tables D3.3 and D3.4, p. 496-501).

Significant features of these tests seem to indicate that teachers with a degree in geography and with teacher training or who were undergoing the teacher training used a diversity of teaching resources more frequently than teachers without a degree in geography and without teacher training.

These findings also have implications for geography teaching development and suggest that teachers with adequate academic and training qualifications do more imaginative teaching, asking students' participation and using when they are available, a variety of teaching resources.

The lack of teaching resources is a serious obstacle for the development of geography teaching.

Fieldwork, Study Visits and Excursions

The first question concerned the teachers' opinion about the need to undertake fieldwork in geography teaching. Seven hundred and four teachers (93.7%) stated yes; thirty-two (4.3%) stated no; fifteen (2.0%) did not answer.

The questionnaire asked to justify their answers. Some teachers gave more than one answer. The responses are presented in Table 6.20.

Among the thirty-two teachers who stated that to undertake fieldwork is not indispensable, twenty-one stated that fieldwork is useful, important or very important but not indispensable. Nevertheless according to three teachers, pupils think that study visits are only enjoyment and not a way of learning; and another three stated that indirect observation can replace direct observation.

The questionnaire also asked for the difficulties teachers have in undertaking fieldwork. Some teachers gave more than one answer. Table 6.21 presents the difficulties stated by teachers. The implications of these results for curriculum development are notorious and suggest that alterations should also be introduced at institutional level.

The questionnaire also asked for outdoor activities organized during the questionnaire year in each form. The number of teachers who stated they organized one or more activities in each year were the following ones:

- 7th year - 92 (22.8%)
- 8th year - 144 (31.1%)
- 9th year - 103 (27.2%)
- 11th year - 'area of study' A - 32 (46.4%)
- 10th year - 'area of study' C - 3 (42.9%)
- 11th year - 'area of study' C - 4 (80.0%)
- 10th or 11th years - 'area of study' D - (28.0%)
- 12th year - 24 (22.0%)

The percentages were calculated in relation to the total number of teachers who were teaching each year.

The list of outdoor activities undertaken in each form is presented in Appendix D3, p. 501-503.

Table 6.20

Reasons why there is a need to undertake fieldwork in geography
(Teachers)

Reasons	F	% of responses	% of cases
Direct observation is indispensable	313	33.5	46.6
Gives students the possibility of contacting reality	170	18.2	25.1
Facilitates learning (the understanding of phenomena)	100	10.7	14.9
Motivates pupils for learning geography	88	9.4	13.0
Links theory with practice	79	8.5	11.7
Gives the possibility of knowing the local area, the environment better	50	5.4	7.5
Gives the possibility to add knowledge to that acquired in classroom	45	4.8	6.7
Develops the capacity of observation	36	3.9	5.4
Develops enquiring habits and techniques	12	1.3	1.7
Develops different capacities	9	1.0	1.2
Some syllabuses objectives are only attained through field work.	8	0.9	1.2
Others - Develops geographical thinking (4) - Sensibilizes pupils to different problems (2) - Makes a contribution to integrating pupils in the environment (4), to respect Nature (1) - Facilitates relations teacher/pupils (3) - Shows evidence of the practical value of geographical knowledge (2) - Contributes to pupils learning orientation and scales (2), to enlarging the geographical vocabulary (1), knowing the country (1) - Gives the possibility of contacting people of different professions (2) - Permits active teaching with large pupils' participation (1)	23	2.5	3.3
Total of responses	933 (a)	100.0	138.3 (a)

(Respondents 671)

(a) Some teachers gave more than one response.

Table 6.21**Difficulties in undertaking fieldwork, study visits or excursions
(Teachers)**

Difficulties	F	% of respon- ses	% of cases
No finance	526	34.9	77.0
Large number of pupils in each class	166	11.0	24.3
No time	141	9.3	20.6
Lack of time ascribed for these activities	128	8.5	18.7
Small number of hours per week ascribed for geography teaching in each year	82	5.4	12.0
Too much content to cover	77	5.1	11.3
Each teacher has too many classes	75	5.0	11.0
Pupils' timetables overloaded	46	3.0	6.7
No school transport	36	2.4	5.3
No official support	35	2.3	5.1
Lack of resources	27	1.8	4.0
Lack of planning and co-ordination inter-disciplinary	16	1.1	2.3
Problems of organization and planning	15	0.9	2.2
Classes of 50 minutes	14	0.9	2.0
Pupils' behaviour	13	0.9	1.9
Lack of teacher preparation	11	0.7	1.6
Lack of pupil interest	10	0.7	1.5
No motivation of pupils and teachers	10	0.7	1.5
Bureaucracy	10	0.7	1.5
Lack of interesting aspects in the countryside	9	0.6	1.3
Others - School raises obstacles (6) - Parents raise obstacles (1) - No parent collaboration (4) - Enterprises raise obstacles (4) - Ignorance of the environment (4) - No initiative (4)	62	4.1	9.1
Total of responses	1 509 (a)	100.0	220.9 (a)

(Respondents 683)

(a) Some teachers gave more than one response

The duration of these activities varied from one hour or a small number of hours to half a day, one day or even two or three days. Some of these activities were part of a project work and pupils had been involved in collecting data for one or two weeks, and up to a whole term or even for a longer period of time.

Syllabuses

Finally the questionnaire asked for the teachers' opinions about syllabuses. They were open questions about the national syllabuses concerning all secondary education years (from the 7th year until the 12th year). The coding of the answers was difficult and time consuming. Some respondents gave more than one answer and others responded to only some aspects of the questions. In relation to all questions the total number of respondents is indicated.

Unified General Course (7th, 8th and 9th years)

The questionnaire asked for teachers to indicate specific contributions of geography to pupils' education which could justify its inclusion in the Unified General Course curriculum. Five hundred and eighteen teachers (69.0%) responded to the question. The results are presented in Table 6.22.

The questionnaire also asked for teachers' opinion about the content of each syllabus, their sequence and to suggest any modifications that could contribute to ameliorate them. The results are presented in Tables 6.23, 6.24 and 6.25.

Syllabuses: 7th year - concept of geography, observation and representation of the local environment, systematic physical geography;

8th year - geography of Portugal;

9th year - human geography - world population, agriculture, industry and urban geography (study by continents).

The questionnaire also asked for the teachers' main problems improving geography teaching in the Unified General Course. Five hundred teachers (66.6%) answered this question. The results are shown in Table 6.26.

Table 6.22**Contribution of geography to pupils' education
(Teachers)**

Geography contributes to the:	F	% of respon- ses	% of cases
Understanding of the world of today and its problems	220	19.2	42.5
Understanding of the environment	113	9.9	21.8
Development of the capacity of observation	110	9.6	21.2
Development of other mental capacities than that of observation (some teachers gave examples)	94	8.2	18.1
Awareness and understanding of spatial organization	74	6.5	14.3
'General culture'	66	5.8	12.7
Knowledge about the Earth	61	5.3	11.8
Pupil integration in the environment	54	4.7	10.4
Knowledge of Portugal and understanding of its problems	46	4.0	8.9
Understanding of other subjects	38	3.3	7.3
Localization of phenomena (and orientation)	31	2.7	6.0
Understanding of the region where the pupil lives	30	2.6	5.8
Pupil localization in the space where he lives	24	2.1	4.6
Understanding of landscape	23	2.0	4.4
Graphicacy	20	1.7	3.9
Capacity of acting in the environment where he lives	19	1.7	3.7
Understanding of day by day life facts	15	1.3	2.9
Understanding of the relationships of Man with Nature (environment, space)	13	1.1	2.5
International understanding	11	1.0	2.1
Acquisition of other knowledge	9	0.8	1.7
Resolution of problems	6	0.5	1.2
Acquisition of knowledge useful for day to day life	6	0.5	1.2
Development of oral and writing skills	5	0.4	1.0
Others - Prevision of phenomena - Acquisition of geographical vocabulary - Statistical knowledge - Nature respect - Knowledge useful for higher education courses - Knowledge useful for professional life - Media understanding	15	1.3	2.9
Others (several)	43	3.8	8.3
Total of responses	1 146 (a)	100.0	221.2 (a)

(Respondents 518)

(a) Some teachers gave more than one response.

Table 6.23**Teachers' opinions about the 7th, 8th and 9th years syllabuses**

Opinions	F
Agreed with the content and the sequence	213
Did not agree with the content but agreed with the sequence	52
Agreed with the content but did not agree with the sequence	40
Did not agree both with content and sequence	80
Total	385

(Respondents 385)

Table 6.24**Teachers' main criticisms about the 7th, 8th and 9th years syllabuses**

Criticisms	F
Too much content	288
Too abstract for pupils' age	174
Abstract, not connected with pupils' realities	14
Too descriptive, not applied to pupils' realities	2
Monotonous	11
Unconnected with other subjects	22
No connection between syllabuses	17
No connection between the topics	15
No connection between the content and the objectives	10
Syllabuses out of date	3
Small importance given to the study of the local area or the region	15
Others	23
Total	594 (a)

(Respondents 584)

(a) Some teachers gave more than one response.

Table 6.25**Teachers' main suggestions for improving the 7th, 8th and 9th years syllabuses**

Main suggestions	F
Simplify the study of some topics	17
Include the study of regional geography	45
Give more importance to the localization of facts and phenomena	36
Link physical geography with human geography	13
Include the study of basic notions of cosmography	35
Include the study of time	15
Include the study of political geography	10
Need for a better connection between the Unified General Course syllabuses and those of the Preparatory Cycle and of the Complementary Course	24
Others	21
Total	216 (a)

(Respondents 201)

(a) Some teachers gave more than one response.

Complementary Course and 12th year

The questionnaire included the same questions for all years. Only teachers who were teaching or had taught a certain syllabus were asked to respond to questions concerning this specific syllabus. Some made more than one statement.

The questions were:

- Give your opinion about the adequacy of the syllabus to students' needs and interests.
- Indicate the main problems in relation to the syllabus and make suggestions to ameliorate it.
- Indicate other problems and indicate innovations in order to improve geography teaching in this year and/or 'area of study'.

Table 6.26**Teachers' opinions about the main problems for improving geography teaching in the 7th, 8th and 9th years**

Main problems	F
Insufficiency of teaching hours per week	399
Insufficiency of teaching resources	160
Insufficiency of pupils' prior preparation	60
Too many pupils per class	52
Lack of a specially equipped room	51
Difficulties in doing direct observation	31
Insufficiency of time to undertake fieldwork	5
Insufficiency of time for practical classes	22
Pupils dislike the subject	13
Lack of interdisciplinarity	13
Pupils' different abilities and prior geographical knowledge	10
Insufficiency of departmental allowances	10
Insufficiency of support at regional level	8
Others	31
Total	865 (a)

(Respondents 500)

(a) Some teachers gave more than one response.

Tables 6.27, 6.28 and 6.29 presents teachers' opinions about the 'area of study' A - 11th year.

Syllabus: physical geography.

Tables 6.30, 6.31 and 6.32 presents teachers' opinions about the 'area of study' C - 10th and 11th years.

Syllabuses: human geography.

Tables 6.33, 6.34 and 6.35 presents teachers' opinions about the 'area of study' D - 10th or 11th years.

Syllabus: human geography and economic geography.

Table 6.27

**Teachers' opinions about the adaptation of the 'area of study'
A-11th year syllabus to students' needs and interests**

Adaptation	F
Well adapted	49
Not well adapted	25
Some students dislike geography because they could not choose another option or because they made a wrong choice	6
Only adapted to students who will study geography at University	2
Total	82

(Respondents 82)

Table 6.28

**Teachers' opinions about the 'area of study' A-11th year
syllabus problems**

Problems	F
Too much content	48
Complexity of some topics (need to simplify them)	25
Need to include basic notions of cosmography	10
The content is partially a repetition of the 7th year content	5
Need to include human geography, of linking physical and human geography	8
Others	13
Total	109 (a)

(Respondents 81)

(a) Some teachers gave more than one response.

Table 6.29**Teachers' opinions about other problems in improving geography teaching in the 'area of study' A-11th year**

Other problems	F
Differences between students in relation to prior geographical knowledge	42
Insufficiency of teaching hours per week	35
Insufficiency of teaching resources	27
Difficulties of doing direct observation	4
Insufficiency of time to undertake fieldwork	4
Insufficiency of time for practical classes	3
Lack of good bibliography adequate for students	6
Insufficiency of departmental allowances	3
Others	11
Total	135 (a)

(Respondents 80)

(a) Some teachers gave more than one response.

Table 6.30**Teachers' opinions about the adaptation of the 'area of study' C-10th and 11th years syllabuses to students' needs and interests**

Adaptation	F
Well adapted	5
Not well adapted	3
Theory adapted, practice not adapted	1
Total	9

(Respondents 9)

Table 6.31**Teachers's opinions about the 'area of study' C-10th and 11th years syllabuses problems**

Problems	F
Too much content	3
Lack of connection with other syllabuses	1
Total	4

(Respondents 4)

Table 6.32**Teachers' opinions about other problems in improving geography teaching in the 'area of study' C-10th and 11th years**

Other problems	F
Lack of a good textbook	2
Lack of bibliography adequate for students	2
Insufficiency of support at regional level	2
Insufficiency of teaching resources	1
Need for classes of 2 hours	1
Difficulty in connecting teaching with students' reality	1
Total	9 (a)

(Respondents 6)

(a) Some teachers gave more than one response.

Table 6.33**Teachers' opinions about the adaptation of the 'area of study' D-10th or 11th years syllabus to students' needs and interests**

Adaptation	F
Not well adapted	53
Well adapted	40
Some students dislike geography because they could not choose another option	1
Only adapted to students who will study geography at University	1
Total	95

(Respondents 95)

Table 6.34**Teachers' opinions about the 'area of study' D-10th or 11th years syllabus problems**

Problems	F
A large part of the content is similar to the 9th year syllabus content	86
Too much content	37
A need to include economic geography	10
A need to modify whole the syllabus	9
A need to simplify some topics	8
A need to include physical geography	7
Others	19
Total	176 (a)

(Respondents 110)

(a) Some teachers gave more than one response.

Table 6.35**Teachers' opinions about other problems in improving geography teaching in the 'area of study' D-10th or 11th years**

Other problems	F
Insufficiency of teaching hours per week	17
Differences between students in relation to prior geographical knowledge	17
Lack of good bibliography adequate for students	13
Insufficiency of teaching resources	10
Insufficiency of time to undertake fieldwork	6
Difficulties doing direct observation	4
Insufficiency of time for practical classes	4
Lack of a specially equipped geography room	4
Insufficiency of departmental allowance	4
Others	6
Total	85

(Respondents 85)

Tables 6.36, 6.37 and 6.38 presents teachers' opinions about the 12th year - 1st, 2nd and 3rd Courses.

Syllabus: history of geography; techniques of geographical analysis; human and economic geography (spatial organization of rural, industrial and urban spaces).

Table 6.36

Teachers' opinions about the adaptation of the 12th year syllabus to students' needs and interests

Adaptation	F
Well adapted	37
Not well adapted	51
Some students dislike geography because they could not choose another option or because they made a wrong choice	5
Only adapted to students who will study geography at University	1
Total	94

(Respondents 94)

Table 6.37

Teachers' opinions about the 12th year syllabus problems

Problems	F
Too much content	78
Need to simplify some topics	56
Part of the syllabus is similar to the 'area of study' D and to the 9th year syllabuses	17
The syllabus should be different for each course (1st, 2nd and 3rd)	10
Lack of connection between objectives and content	8
Need to link teaching with students' reality	8
Need to include physical geography	8
Others	19
Total	204 (a)

(Respondents 113)

(a) Some teachers gave more than one response.

Table 6.38**Teachers' opinions about other problems in improving geography teaching in the 12th year**

Other problems	F
Differences between students in relation to prior geographical knowledge	63
Insufficiency of teaching hours per week	27
Lack of good bibliography adequate for students	31
Insufficiency of teaching resources	20
Need of in-service teacher training	19
Insufficiency of time for practical classes	11
Insufficiency of support at regional level	10
Insufficiency of time to undertake fieldwork	7
Others	25
Total	213 (a)

(Respondents 109)

(a) Some teachers gave more than one response.

All these findings have very important implications for curriculum development.

1. For geography teachers the main contributions of geography to pupils' education were: world knowledge, environmental awareness, the development of mental capacities and specially the capacity of observation, a knowledge of Portugal and of the region where pupils live, and the localization of phenomena.
2. The main criticisms of the present Unified General Course syllabuses concerned syllabus overload (too much content to cover). Many teachers specified that this concerned especially the 7th year but also the 9th year (in these forms the time ascribed for geography is two teaching periods/week). It is also often mentioned that geography syllabuses are too abstract for pupils' age and teachers specified that this concerned specially the 7th year (the 7th year syllabus prescribed after the study of concept of geography, of observation and representation of the local environment, systematic physical geography). Other problems concerned specially the insufficiency of teaching time, mentioned above and of teaching resources.

3. The main criticisms of the Complementary Course and 12th year syllabuses concerned again syllabus overload (too much content to cover) and in relation to area D the fact that a large part of the content was similar to the 9th year syllabus (in the area D - 10th or 11th years again prescribed the study of rural, industrial and urban spatial organization. This study is again prescribed for the 12th year). Other problems concerned essentially: students' differences in relation to prior geographical knowledge; insufficiency of teaching time per week; insufficiency of resources; difficulties for undertaking fieldwork; lack of bibliography adequate for students; insufficiency of support at regional level and of in-service training; among others.

6.2.2 9th Year Pupils' Questionnaires

The Data Analysis

The Secondary Schools

The questionnaires were sent to state secondary schools. The questionnaires were sent to schools that varied in location and in type.

Location - the questionnaires were sent to schools located in all Portuguese districts (in Continental Portugal) and within the same district, they were sent to schools located in the capital of the district and in other towns or 'vilas' (small towns).

Type of school - the questionnaires were sent to schools with Unified General Course (7th, 8th and 9th years of schooling) or with Unified General Course and Complementary Course (10th, 11th and 12th years of schooling). Schools prior to the unification of secondary education, were either 'liceus' or 'technical schools' or new schools.

Two thousand, two hundred and seventy-four pupils from fifty-five schools filled in the questionnaire. The distribution of the sample and of the population (the total of 9th year pupils at state secondary schools, day classes, by district) is presented in Table 6.39.

Table 6.39 shows that there is quite a good degree of similarity between the sample and the population, something which affords confidence in the sampling concerning the distribution of pupils by district at least in its consistency.

Table 6.39

Distribution of the sample and of the population by district
(the total of 9th year pupils at state secondary schools,
day classes, in 1983-1984)

Districts	Sample		Population
	F	%	%
Aveiro	124	5.5	6.0
Beja	19	0.8	1.5
Braga	104	4.6	4.7
Bragança	76	3.3	2.1
Castelo Branco	71	3.1	2.3
Coimbra	137	6.0	4.5
Évora	100	4.4	1.9
Faro	99	4.4	4.0
Guarda	103	4.5	1.8
Leiria	72	3.2	3.4
Lisboa	558	24.5	28.7
Portalegre	92	4.0	1.1
Porto	228	10.0	15.3
Santarém	140	6.2	4.7
Setúbal	166	7.3	9.6
Viana do Castelo	71	3.1	2.1
Vila Real	75	3.3	2.8
Viseu	39	1.7	3.5
Total	2274	100.0	100.0

Source of population data: Ministério da Educação e Ciência, Direcção-Geral do Ensino Secundário

Age of the Sample

The youngest pupils in the sample were 13 years old, whilst the oldest were 22 years old. The modal age of the pupils was 15 years. About 31.5% of the pupils fell into this class. Pupils who did not fail any school year would be 14 or 15 years old when they reached the 9th year. They represent about 47.6% of the sample (it included the 13 year old pupils). The distribution of pupils by age is shown in Table 6.40.

Table 6.40

Distribution of 9th year pupils by age

Age	F	%	Valid %	Cumulative %
13	3	0.1	0.1	0.1
14	363	16.0	16.5	16.6
15	716	31.5	32.5	49.1
16	479	21.1	21.7	70.8
17	396	17.4	18.0	88.8
18	174	7.7	7.9	96.7
19	48	2.1	2.2	98.9
20	22	1.0	1.0	99.9
21	2	0.1	0.1	100.0
22	1	0.0	0.0	100.0
Not known	70	3.1	missing	
Total	2 274	100.0	100.0	

Sex of the Sample

The distribution of pupils by sex is shown in Table 6.41.

Table 6.41**Distribution of 9th year pupils by sex**

Sex	F	%	Valid %	Cumulative %
M	951	41.8	42.5	42.5
F	1 289	56.7	57.5	100.0
Not known	34	1.5	missing	
Total	2 274	100.0	100.0	

Specialist Area of the Sample

The questionnaire asked for pupils 'specialist area' ('área vocacional').

The type of specialist area pupils were following in the 9th year was not a constraint to further options in the Complementary Course. Only some areas are available in each school and in many cases pupils choose the easiest one (or which is deemed to be the easiest). The difference between 'specialist areas' is only of one discipline. The distribution of pupils by 'specialist area' is shown in Table 6.42.

Academic Background (Unified General Course)

The questionnaire also asked for pupils marks in the last term of the 7th and 8th years in Portuguese, Geography and Mathematics. These marks are shown in Table 6.43.

Geography

The following items in the questionnaire attempted to determine if geography was or was not a popular subject among 9th year pupils and the most significant reasons that accounted for it.

Table 6.42**Distribution of 9th year pupils by 'specialist area'**

'Specialist area'	F	%	Valid %	Cumulative %
Agriculture	68	3.0	3.0	3.0
Health	900	39.6	39.6	42.6
Sports	145	6.4	6.4	49.0
Mechanics	20	0.9	0.9	49.9
Electronics	138	6.1	6.1	56.0
Chemistry	41	1.8	1.8	57.8
Administration and Commerce	335	14.7	14.8	72.5
Economics	428	18.8	18.8	91.4
Art and Design	75	3.3	3.3	94.7
Drama	51	2.2	2.2	96.9
Music	70	3.1	3.1	100.0
Not known	3	0.1	missing	
Total	2 274	100.0	100.0	

The questionnaire asked pupils to indicate their preference order for the 9th year subjects (1 for the subject which they liked best, 11 for the subject they liked least. The range of values went from 1 up to 11). The results are shown in Table 6.44.

Geography, physics and chemistry were the subjects ranked in the first place by a smaller percentage of pupils 3.2%. Nevertheless geography was also the discipline that a smaller percentage of pupils ranked in the three last places, 9th, 10th and 11th, respectively 4.5%, 3.0% and 1.3%.

Geography was ranked in the first five places by 59.7% of pupils, and in the first six places by 76.2%. Consequently only 23.8% ranked geography in the last five places.

The modal preference order was 4 (about 17.5% of the pupils placed

Table 6.43**Percentage of 9th year pupils obtaining marks 1-5 by year and subject (Portuguese, Geography and Mathematics)**

Marks	7th year			8th year		
	Port.	Geog.	Math.	Port.	Geog.	Math.
	%					
1	0.1	0.1	1.8	0.2	0.0	3.4
2	3.7	4.8	20.1	7.0	5.4	21.7
3	67.6	65.7	50.5	72.4	69.6	52.3
4	22.0	22.1	19.5	16.3	19.5	17.3
5	4.7	5.3	6.6	2.9	4.1	4.1
Not known	1.8	1.9	1.5	1.1	1.3	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note - In the 7th, 8th and 9th years the marking system is 1-5. A mark of 1 or 2 corresponds to a fail; 3, 4 or 5 to a pass (3 - average, 4 - good, 5 - very good). The third term mark is the final one.

geography in the 4th place). The other more frequent values were 6, 5 and 3. Thus geography seems to be a subject that the majority of pupils liked (but not very much).

The questionnaire asked for the most significant reasons why pupils placed geography in the first six places or in the last five places. A structured format was used, in which the respondent was asked to select three of eight possible replies. The range of possible responses was carefully considered in the planning of the questions and other items were provided to permit respondents to indicate other significant factors.

The eight possible reasons for placing geography among the first six subjects were the following ones:

Note - The letters (a) to (h) correspond to the order of strategies and methods presented in the questionnaire.

- (a) Geography gives me the knowledge to orientate myself with the compass, to locate my school, the place where I live, Portugal, and so on, through the use of plans and maps.

Table 6.44

9th year pupils' preference order for the 9th year subjects

Disci- plines Preference order	Portu- guese	French	English	German (a)	Mathema- tics	History	Geogra- phy	Biology	Physics/ Chemistry	Art	Vocatio- nal Area	Physical Education
	Valid %											
1	5.8	5.5	14.4	20.0	13.8	11.2	3.2	8.9	3.2	5.5	13.6	15.6
2	8.8	6.7	9.0	3.3	8.8	10.6	8.8	11.1	8.1	6.8	10.7	11.8
3	9.8	6.7	8.1	10.0	6.7	10.6	13.9	13.1	7.2	7.4	9.3	8.0
4	9.4	7.0	7.3	13.3	6.2	10.9	17.5	10.6	7.0	8.0	8.3	8.5
5	9.6	8.3	6.6	3.3	5.9	10.6	16.3	11.2	7.3	8.1	9.4	7.3
6	10.6	8.4	6.9	10.0	5.8	8.3	16.5	12.4	8.3	7.7	9.2	6.3
7	12.4	9.6	7.0	13.3	5.3	7.3	8.5	11.5	11.4	10.9	8.8	8.0
8	11.7	13.1	6.6	6.7	6.3	7.4	6.5	8.3	12.4	10.0	9.5	8.9
9	10.5	11.7	9.8	6.7	7.0	8.0	4.5	6.2	12.7	13.1	8.6	8.6
10	7.2	13.7	10.3	6.7	11.6	7.5	3.0	3.6	14.0	10.8	8.2	10.0
11	4.3	9.3	14.0	6.7	22.5	7.6	1.3	3.1	8.5	11.7	4.4	6.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	6.0	6.8	6.1	5.3	6.6	5.5	5.1	5.2	6.8	6.7	5.4	5.5
Stand. Dev.	2.8	3.0	3.5	3.3	3.7	3.2	2.2	2.7	2.9	3.1	3.1	3.4
Median	6.0	7.0	6.0	5.5	7.0	5.0	5.0	5.0	7.0	7.0	5.0	5.0
Mode	7	10	1	1	11	1	4	3	10	9	1	1

(a) Only 30 pupils followed German.

- (b) Geography gives me the possibility of acquiring some knowledge about physical aspects of the Globe (relief, climate, vegetation...).
- (c) Geography gives me the possibility of acquiring some knowledge about human aspects of the Globe (population, economic activities,...).
- (d) Geography helps me to understand the main economic and social problems of the World of today and possible solutions to these problems.
- (e) Geography gives me knowledge that will be useful for my future life.
- (f) In geography classes the teacher organizes many activities: group work, individual work, map reading, graph work and so on.
- (g) In geography classes the teacher uses audio-visual media: slide projector, film projector, overhead projector, and so on.
- (h) Geography is an easy subject.

The eight possible reasons for placing geography among the last five subjects were the following ones:

- (a) I do not like to study the physical aspects of the Globe (relief, climate, vegetation,...).
- (b) I do not like to study human geography (population, economic activities, urban aspects,...).
- (c) Geography does not help me to understand social and economic problems of the world of today and the possible solutions to these problems.
- (d) Geography does not give me the kind of knowledge that will be useful for my future life.
- (e) Geography classes are monotonous because the teacher does not organize many activities such as: group work, individual work, map reading, graph work and so on.
- (f) Geography classes are not very interesting because the teacher does not use audio-visual media: slide projector, film projector, overhead projector, and so on.

- (g) Geography is a difficult subject.
- (h) Geography is entirely learning content by heart.

The frequencies and percentages of the reasons indicated by pupils who placed geography among the first six subjects are presented in Table 6.45.

Table 6.45

**Responses given by 9th year pupils who placed
geography among the first six subjects**

Reasons	F	% of responses
(a) - Geography gives me the knowledge to orientate myself with the compass, to locate my school, the place where I live, Portugal, and so on, through the use of plans and maps	178	3.4
(b) - Geography gives me the possibility of acquiring some knowledge about physical aspects of the Globe (relief, climate, vegetation, ...)	1123	21.7
(c) - Geography gives me the possibility of acquiring some knowledge about human aspects of the Globe (population, economic activities, ...)	1205	23.3
(d) - Geography helps me to understand the main economic and social problems of the world of today and possible solutions to these problems	1142	22.1
(e) - Geography gives me knowledge that will be useful for my future life	873	16.9
(f) - In geography classes the teacher organizes many activities: group work, individual work, map reading, graph work, and so on	132	2.6
(g) - In geography classes the teacher uses audio-visual media: slide projector, film projector, overhead projector, and so on	120	2.3
(h) - Geography is an easy subject	402	7.8
Total	5 175	100.0

(Respondents 1725) (i)

549 missing (ii)

- (i) - Each pupil was asked to indicate three reasons. Five pupils who placed geography among the first six subjects did not indicate three reasons and their answers are not included in the table.
- (ii) - Pupils who placed geography among the last five subjects are included in Table 6.46.

According to the responses given by pupils the most important reasons for placing geography in the first six places are: the acquisition of knowledge about human (c), physical (b), economic and social aspects of the Globe (d), knowledge that is useful for their future lives (e); geography is an easy subject (h) is also indicated in 7.8% of responses; however, there is a small percentage of pupils who indicated the reasons concerning the acquisition of skills ex: map reading (a) and the utilization of active methods of teaching (f) or audio-visual media (g).

The frequencies and the percentages of the reasons indicated by pupils who placed geography among the last five subjects are presented in Table 6.46.

Table 6.46

**Responses given by 9th year pupils who placed
geography among the last five subjects**

Reasons	F	% of responses
(a) - I do not like to study physical aspects of the Globe (relief, climate, vegetation, ...)	212	14.2
(b) - I do not like to study human geography (population, economic activities, urban aspects, ...)	199	13.4
(c) - Geography does not help me to understand social and economic problems of the world of today and possible solutions to these problems	119	8.0
(d) - Geography does not give me the kind of knowledge that will be useful for my future life	136	9.1
(e) - Geography classes are monotonous because the teacher does not organize many activities such as group work, individual work, map reading, graph work, and so on	181	12.1
(f) - Geography classes are not very interesting because the teacher does not use audio-visual media: slide projector, film projector, overhead projector, and so on	194	13.0
(g) - Geography is a difficult subject	190	12.8
(h) - Geography is entirely learning content by heart	260	17.4
Total	1 491	100.0

(Respondents 497) (i)

1730 missing (ii)

- (i) - Each pupil was asked to indicate three reasons. Forty seven pupils who placed geography among the last five subjects did not indicate three reasons and their answers are not included in the table.
- (ii) - Pupils who placed geography among the first six subjects are included in Table 6.45

According to the responses given by pupils, the most important reasons for placing geography among the last five subjects in order of preference are: geography is entirely learning content by heart (h); a dislike for physical geography (a) and human geography (b); active methods of teaching are not used in geography classes (e) and lack of use of audio-visual media (f), and that geography is a difficult subject (g); on the contrary, the reasons: geography does not help me to understand social and economic problems of the world of today and possible solutions to these problems (c) and geography does not give knowledge useful for future life (d) are indicated by a smaller percentage of pupils.

The responses seem to point to:

- geography teaching being based on the acquisition of knowledge and not on the development of skills
- teacher-centred teaching (active methods of teaching seem to be seldom employed and the utilization of audio-visual media seems infrequent)
- on the other hand problems of the world of today seem to be usually studied in geography classes
- pupils think that geographical knowledge is useful for their future lives.

Aspects of Geography

Pupils were asked to indicate their enjoyment of the different aspects of geography that they were studying (see Chapter 5, p. 171 and Appendix C).

A three point scale was used to measure pupils' attitudes towards the different aspects of geography.

Key to scale: 1 = likes it; 2 = is indifferent; 3 = does not like it.

The results are presented in Table 6.47.

Table 6.47 shows that the majority of students seem to be enjoying the study of different aspects of geography - physical, human/economic and regional (trade and transport are aspects that are not studied in depth); but it seems that the

majority were indifferent or disliked the study of the region where the school was located as well as map reading and work with graphs.

Some reasons might account for these answers:

- they are studying an area that has already been addressed in Primary and Preparatory schools that is, the study of the region where the school is located
- it was expected that the study of this topic in Secondary school would be addressed in a more interesting and deeper way than seems to have been the case
- teachers might not have used the right approaches to the topic, such as fieldwork, research methods
- Tables 6.45 and 6.46 suggests that the majority of pupils do not often do certain kinds of work such as map work and work with graphs.

Comments and Suggestions

The questionnaire also asked pupils to comment on and give suggestions about geography teaching (It was an open question, the purpose of which was to enable respondents to vent their feelings freely).

Comments

Only 38.6% of the sample commented on geography teaching. The results are presented in Table 6.48.

There were a large variety of responses and it was difficult to code them. This explains that 37.5% of the responses were included in the category 'others'. Pupils commented on syllabus content; on methods and resources used in geography classrooms; on evaluation processes; on teachers; and why they enjoyed or not, geography classes. The other responses were included in seven categories: the most common comment was that 'geography classes are pleasant, not monotonous, interesting'; the second most common was the contrary: 'geography classes are monotonous, uninteresting'. Nevertheless, there was a large difference in the percentage of cases, which was respectively 31.9% and 13.0%; the third most

Table 6.48**9th year pupils' comments on geography**

Comments	F	% of responses	% of cases
Geography is not monotonous, it is interesting	280	23.7	31.9
Geography is monotonous, uninteresting	114	9.7	13.0
Geography is important to understand the world and its problems	95	8.1	10.8
Geography is an easy subject	79	6.7	9.0
Geographical knowledge is useful in day to day life	72	6.1	8.2
Geography makes an important contribution for pupils' cultural development	69	5.9	7.9
Geography is a difficult subject	28	2.4	3.2
Others	442	37.5	50.4
Total	1 179	100.0	134.4 (a)

(Respondents 877)

(a) - Some pupils gave more than one response.

common comment (10.8% of the cases) was 'geography is important to understand the world and its problems'; the other comments (in descending order of frequency) were 'geography is an easy subject'; 'geographical knowledge is useful in day to day life'; 'geography makes an important contribution (or is indispensable) for pupils' (or the population) cultural development (or for their 'general culture')'; 'geography is a difficult subject'.

Suggestions

The percentages of the suggestions given by pupils about geography teaching are presented in Table 6.49. Only 40.5% of the pupils gave one or more suggestions.

Table 6.49**9th year pupils' suggestions for improving geography teaching**

Suggestions	F	% of responses	% of cases
Study visits or excursions	365	26.4	39.7
Use of audio-visual media	220	15.9	23.9
Group work	157	11.4	17.1
Reduce content (to know by heart)	95	6.9	10.3
Outdoor classes	70	5.1	7.6
Map work	60	4.3	6.5
More hours/week ascribed for geography teaching	44	3.2	4.8
More pupil participation in geography classes	30	2.2	3.3
Study Portugal in more depth	23	1.7	2.5
Use of more teaching resources	20	1.4	2.2
Study some topics in more depth	18	1.3	2.0
Individual work	14	1.0	1.5
Others	265	19.2	28.8
Total	1 381	100.0	150.2 (a)

(Respondents 919)

(a) - Some pupils gave more than one response.

The most common suggestion (39.7% of the cases) was to advocate study visits or excursions; the second (23.9% of the cases) was to encourage the use of audio-visual media (slide projector, overhead projector, film projector, video), the third (17.1% of the cases) to propose group work; the fourth (10.3% of the cases) was to reduce content (to know by heart); the fifth (7.6% of the cases) was to suggest outdoor classes. Other suggestions (in descending order of frequency) were to propose: map work; more hours per week ascribed for geography teaching; bigger pupils' participation in geography classes; to study Portugal in more depth;

to use more teaching resources; to study some topics in more depth; individual work.

These suggestions given by pupils seem to confirm that in geography teaching certain procedures are not generalized such as direct observation of phenomena; use of audio-visual media; teaching methods based on pupils' activity and on the contrary, classroom activities were still dominated by teacher-centred events.

In the category 'others' (28.8% of the cases) suggestions concerning the subject, syllabus content or aspects of the content, methods and resources used in geography classrooms, evaluation and teachers are included.

Definition of Geography

Finally the questionnaire asked pupils to give a definition of geography. 88.3% of the sample gave a definition of geography. The coding of the responses was difficult.

In Table 6.50 the frequencies and the percentages of the definitions are presented.

Code:

1. Geography studies landscapes (or the physical and human aspects of landscapes or physical and human landscapes).
2. Geography studies physical and human aspects of the Globe (or of the Earth, of the World).
3. Pupils indicated some physical and human aspects of the Globe that geography studies.
4. Geography studies the environment.
5. Geography studies different aspects of the Globe (or of the Earth, of the World).
6. Geography studies the World (or the Globe, the Earth) and its problems.
7. Geography studies the relationships between Man and the environment (or landscape, Nature, the World).
9. Geography studies the physical and human environment.
10. Geography studies physical and human aspects.

Table 6.50

Definitions of geography
(9th year pupils)

Definitions	F	%	Valid %	Cumulative %
1 - Geography studies landscapes (or the physical and human aspects of landscapes or physical and human landscapes)	273	12.0	13.6	13.6
2 - Geography studies physical and human aspects of the Globe (or of the Earth, of the World)	294	12.9	14.6	28.2
3 - Pupils indicated some physical and human aspects of the Globe that geography studies	157	6.9	7.8	36.0
4 - Geography studies the environment	51	2.2	2.5	38.6
5 - Geography studies different aspects of the Globe (or of the Earth, of the World)	248	10.9	12.3	50.9
6 - Geography studies the World (or the Globe, the Earth) and its problems	37	1.6	1.8	52.8
7 - Geography studies the relationships between Man and his environment (or landscape, Nature, the World)	20	0.9	1.0	53.8
9 - Geography studies the physical and human environment	19	0.8	0.9	54.7
10 - Geography studies physical and human aspects	112	4.9	5.6	60.3
11 - Geography studies physical aspects	79	3.5	3.9	64.2
12 - Geography studies human aspects	36	1.6	1.8	66.0
13 - Geography studies the Globe (the Earth) and its inhabitants (its population)	32	1.4	1.6	67.6
14 - Geography studies physical and human aspects of countries (of regions, of continents)	77	3.4	3.8	71.4
15 - Geography studies world problems	25	1.1	1.2	72.7
16 - Geography studies human activity and the space where this activity takes place (or the Earth's space)	15	0.7	0.7	73.4
17 - Geography studies Nature (or the physical and human aspects of Nature, or Nature and its population)	34	1.5	1.7	75.1
19 - Others (correct ones)	222	9.8	11.1	86.2
20 - Others (wrong ones)	278	12.2	13.8	100.0
Not known	265	11.7	missing	
Total	2 274	100.0	100.0	

11. Geography studies physical aspects.
12. Geography studies human aspects.
13. Geography studies the Globe (the Earth) and its inhabitants (its population).
14. Geography studies physical and human aspects of countries (of regions, of continents).
15. Geography studies world problems.
16. Geography studies human activity and the space where this activity takes place (or the Earth's space).
17. Geography studies Nature (or physical and human aspects of Nature, or Nature and its population).
19. Others (correct ones).
20. Others (wrong ones).

The definitions 2, 3, 5, 13 and 14 did not differ significantly and corresponded to the same concept: - geography studies physical and human aspects of the Earth's surface. (Valid percentages: 2 - 14.6%; 3 - 7.8%; 5 - 12.3%; 13 - 1.6%; 14 - 3.8%. Total = 40.1%). This definition is in accordance with the separation of physical from human geography which the syllabuses emphasize.

In the definition 1 - geography is the science which studies landscapes (but again physical and human aspects of landscapes or even physical and human landscapes are often mentioned).

Geography as the study of the environment appears in the definition 4, 7 and 9 (but again in the definition 9 it is stated as physical and human environment).

In the definitions 7 and 17 the word Nature (or the physical and human aspects of Nature or even Nature and its population) appears.

In the definition 7 (1.0%) geography appears as a science the object of which is the study of the relationships of Man with the environment (or landscape, Nature, the World) (the Earth's physical part).

In the definition 16 (0.7%) the word space appears.

The definitions included in 10 (5.6%) in spite of being incomplete stressed the duality of physical and human aspects too.

The definitions included in categories 11 and 12 are not correct and pupils

say that geography only studies physical or human aspects of the Earth's surface (3.9% + 1.8% = 5.7%).

The definitions included in categories 6 and 15 stress the fact that geography studies world problems in spite of being incomplete (1.8% + 1.2% = 3.0%).

For the majority of the sample the object of geography is the study of physical and human aspects of the Earth's surface.

Geography as the study of the environment is only mentioned by a minority of the sample.

In definition 16 the word space appears but it seems that this word is again mainly employed with the meaning of the physical part of the Earth.

Geography as the study of the spatial organization of the Earth's surface does not appear in any definition.

It is also important to point out that only a minority of the sample stressed the fact that geography studies the relationships between Man and the environment.

Some examples of pupils' definitions are presented below:

- 'Geografia é a ciência que estuda tanto as paisagens naturais como as humanizadas, em geral a Terra'.
- 'Geografia para mim é o estudo dos aspectos físicos e humanos do Globo'.
- 'Geografia é o que estuda os aspectos físicos e humanos da Natureza'.
- 'Geografia para mim é a ciência que estuda a Natureza e a sua modificação ou seja aspectos naturais e humanos'.
- 'Geografia é a ciência que estuda os aspectos físicos e humanos do ambiente'.
- 'Geografia é a ciência que estuda o clima, o relevo, a vegetação, a população, as actividades profissionais, e os problemas económicos e humanos da população'.
- 'Disciplina que estuda a Terra e os seus problemas'.

- 'A Geografia é uma disciplina que relaciona a vida das populações com o meio que as rodeia'.
- 'Geografia é o estudo da actividade humana e o espaço onde ela se desenvolve com todos os seus intervenientes, causas e consequências'.
- 'Geografia permite-nos viajar nas aulas através de outros países, ou através do nosso, tomando ao mesmo tempo conta dos problemas e suas diversas soluções'.

Or even:

- 'Geografia é uma disciplina como outra qualquer'.
- 'É uma aula que depende essencialmente dos professores'.

Further Analysis of Questionnaire Data

In line with the original aims set out in the introduction of this chapter, it was seen to be appropriate to undertake a report of results gained from selected cross-tabulations.

The aims of the tests were to detect statistically significant differences of attitudes and opinions according to the variables: schools' district location and pupils' age, sex, 'specialist area' and academic background.

- a) The results concerning chi-squared tests of independence between the variables schools' district location, sex and marks obtained in geography in the last term of the 7th and 8th years by preference for geography are summarized in Table D3.5 (see Appendix D3, p. 504).

The most significant features of these tests were:

- There are high statistical probabilities of dependence between the variables schools' district location and sex and preference order for geography or placing geography among the first six places or among the last five ones; and between the marks obtained in geography in the last term of the 7th and 8th years and placing geography among the first six subjects or among the last five ones.

Tests indicated statistically significant differences in the attitudes of pupils to geography (order of preference) according to the:

- Schools' district location -

More pupils than expected from the districts of Beja, Braga, Bragança, Évora, Guarda, Santarém, Viana do Castelo, Vila Real and Viseu ranked geography in the first six places; less pupils than expected from the districts of Castelo Branco, Coimbra, Faro, Lisboa, Portalegre, Porto and Setúbal ranked geography in the first six places; the number of pupils from the district of Leiria who ranked geography in the first six places is equal to the expected one.

These differences seem difficult to explain. Why pupils from districts with better teaching conditions and with teachers better qualified (for instance, Coimbra, Porto,...) show less preference for geography than those from districts where teaching conditions and teachers' qualifications are worse (for instance, from districts of the 'interior') (see Table 6.19, p. 235).

- Marks -

Pupils obtained in the last term of the 7th and 8th years - obviously pupils who obtained better marks showed a greater preference for geography;

- Gender -

More boys than expected placed geography among the first six places; on the contrary more girls than expected placed geography among the last five places.

- b) Cross-tabulations between the variables schools' district location, age, sex, 'specialist areas', marks obtained by pupils in geography in the last term of the 7th and 8th years by reasons why pupils placed geography in the first six places were also undertaken.

- These cross-tabulations showed that the importance given by pupils to the different reasons is not dependent upon the schools' district location, pupils' age, 'specialist areas' or marks they obtained in geography in the last term of the 7th or 8th years.

- Nevertheless there were some differences according the pupils' sex. The most frequently given reason by boys was that 'Geography gives the possibility of acquiring some knowledge about physical aspects of the Globe' (b). This reason was the third more often indicated by girls. Instead, the most frequently given reason by girls was that 'Geography gives the possibility of acquiring some knowledge about human aspects of the Globe' (c).

The cross-tabulation of pupils' sex by the reasons why pupils placed geography in the last five places, also showed some differences between boys and girls. The second most frequently given reason from girls was 'I do not like to study physical aspects of the Globe' (this is the sixth most frequently given reason by boys). Instead the second most frequently given reason from boys was 'Geography classes are monotonous because the teacher does not organize many activities such as group work, individual work and so on' (this reason was the sixth more often indicated by girls). Nevertheless, the reason most indicated by both, boys and girls, was 'Geography is entirely learning content by heart'.

- c) Chi-squared tests of independence between other cross-tabulated variables schools' district location, age, sex, specialist areas and marks obtained in geography in the last term of the 7th and 8th years by aspects of geography (like, be indifferent or dislike to study them) were also done.

The results are summarized in Tables D3.6 a, b, c, d, e and f (see Appendix D3, p. 505-510).

Significant features of these tests were:

There are statistical probabilities of a relationship between all the variables indicated above and the attitudes of pupils (like, be indifferent or dislike) to various aspects of geography.

- Among the significant features those concerning differences according to schools' district location and pupils' age are difficult to explain (see Appendix D3, p. 511 and 512).

- Others concerning pupils' 'specialist areas', are obvious, such as, like to study aspects of geography directly connected with their specialist

areas (for instance, agriculture and economic development, which respectively more pupils than expected from the 'specialist area' of agriculture, in the first case, and from the 'specialist areas' of economics and of administration and commerce, in the second case, like to study), others are difficult to explain.

- In relation to the marks that pupils obtained in geography in the last term of the 7th and 8th years, the tests showed the geographical aspects in relation to which there were statistically, significant differences between pupils who obtained very good or good marks (4 or 5) and those who obtained average and below average marks (3, 2 and 1). These geographical aspects were: the study of relief, map and graph work in relation to the marks obtained in the 7th year; and the study of relief, climate, vegetation, industry, economic development, geography of Portugal and map work in relation to the marks obtained in the 8th year. More pupils than expected who obtained marks of 4 or 5 liked to study the above aspects.

- The tests also showed statistically significant differences according to the pupils' sex: more boys than expected liked to study the following geographical aspects: relief, industry, great regions and continents, other countries than Portugal and to do map and graph work; more girls than expected liked to study population and the region where the school was located.

Conclusions

The 9th year pupils' questionnaire showed evidence that among the majority of the sample pupils, geography was a relatively popular subject. They enjoy geography specially because: they acquire in geography classes, knowledge about human and physical aspects of the Globe; geography helps them to understand the main economic and social problems of the world of today; and geographical knowledge is useful for their future lives.

The main reason indicated by those who placed their preference for geography among the last five subjects is that geography is a subject based on the acquisition of factual knowledge to learn by heart.

The responses given by both groups (those who placed geography among the first six subjects by preference or among the last five subjects) showed evidence that the use of active methods of teaching and the use of audio-visual media are not generalized in geography classes.

These findings are corroborated by the suggestions made by pupils to improve geography teaching in answering an open question placed at the end of the questionnaire.

A further analysis of the questionnaire seems to indicate that there are significant differences among the sample of pupils; specially according the schools' district location, age, sex, 'specialist area' and marks obtained in geography in the last term in the 7th and 8th years.

Differences between districts seem to indicate the need to devise syllabuses which permit easy adaptation of teaching to regional and local characteristics; differences according to age seem to indicate that syllabuses cannot be the same for day and evening classes (which has not been always the case); gender differences, namely the fact that girls show a greater preference for certain aspects of geography and boys for others, namely girls show a greater preference for human geography and boys for physical and regional geography, also has implications for syllabuses design, particularly that they cannot include only one aspect of geography (that is the case of the 7th year syllabus that includes almost only physical geography); differences among 'specialist areas' and among pupils of different abilities also seem to indicate the need for including different aspects of geography in all syllabuses.

In all cases the need is evident for teachers to adapt teaching to the schools' location and to characteristics of each class. This will only be possible if teachers know the schools' local environment and have adequate preparation to take into account pupils' different characteristics, capacities, attitudes and values.

6.2.3 12th Year Students' Questionnaires

The Data Analysis

The Secondary Schools

The questionnaires were sent to state secondary schools. The questionnaires were sent to schools that varied in location and in type.

Table 6.51**Distribution of the sample by district**
(12th year students)

Districts	F	%
Aveiro	51	5.9
Beja	-	0.0
Braga	52	6.0
Bragança	35	4.0
Castelo Branco	22	2.5
Coimbra	94	10.8
Évora	44	5.1
Faro	53	6.1
Guarda	43	4.9
Leiria	12	1.4
Lisboa	118	13.6
Portalegre	23	2.6
Porto	103	11.9
Santarém	54	6.2
Setúbal	47	5.4
Viana do Castelo	36	4.1
Vila Real	20	2.3
Viseu	62	7.1
Total	869	100.0

Notes - The sample includes day and evening classes students from the 'via de ensino' (see Chapter 2).

- In spite of sending two reminder letters the return from schools of the district of Beja was nil.

Location - the questionnaires were sent to schools located in all Portuguese districts (in Continental Portugal) and within the same district they were sent to schools located in the capital of the district and in other towns or 'vilas' (small towns).

Type of school - the questionnaires were sent to schools with Unified General Course, Complementary Course and 12th year or only with Complementary Course and 12th year. Schools that prior to the unification of secondary education, were either 'liceus' or 'technical schools' or new schools.

The Sample

The questionnaire was only addressed to students who followed geography in the 12th year. The questionnaire was filled in by 869 students from 38 secondary schools. The distribution of the sample by district is shown in Table 6.51.

Age of the Sample

The youngest students in the sample were 16 years old (only 2 students), 13.3% were 17 years old, whilst 4.0% were 23 year old and over. The modal age of the students was 18 years. About 34.9% of the students fell into this class. Students who did not fail any previous school year would be 17 or 18 years old. They represent about 48.4% of the sample. (The 16 year old students were included). The distribution of students by age is shown in Table 6.52.

Sex of the Sample

The distribution of students by sex is shown in Table 6.53.

Academic Background

The questionnaire asked for the 'specialist area' ('área vocacional') students had attended in the 9th year. (The type of 'specialist area' students followed in the 9th year is not a constraint to further options in the Complementary Course). The distribution of students by 'specialist area' followed in the 9th year is shown in Table 6.54.

Table 6.52**Distribution of 12th year students by age**

Age	F	%	Valid %	Cumulative %
16	2	0.2	0.2	0.2
17	116	13.3	13.7	13.9
18	303	34.9	35.7	49.6
19	185	21.3	21.8	71.5
20	124	14.3	14.6	86.1
21	54	6.2	6.4	92.5
22	28	3.2	3.3	95.8
23 and over	36	4.0	4.0	100.0
Not known	21	2.4	missing	
Total	869	100.0	100.0	

Table 6.53**Distribution of 12th year students by sex**

Sex	F	%	Valid %	Cumulative %
M	310	35.7	35.8	35.8
F	557	64.1	64.2	100.0
Not known	2	0.2	missing	
Total	869	100.0	100.0	

The questionnaire also asked for the 'study area' ('área de estudo') and the 'specialist area' ('formação vocacional') students had attended in the 10th and 11th years. The distributions of students by 'study area' and by 'specialist area' followed in the 10th and 11th years are shown in Tables 6.55 and 6. 56.

Table 6.54

Distribution of 12th year students by 'specialist area'
followed in the 9th year

'Specialist area'	F	%	Valid %	Cumulative %
Agriculture	16	1.8	2.1	2.1
Health	270	31.1	34.6	36.7
Sports	46	5.3	5.9	42.6
Mechanics	9	1.0	1.2	43.7
Electronics	23	2.6	2.9	46.7
Building	4	0.5	0.5	47.2
Chemistry	9	1.0	1.2	48.3
Administration & Commerce	201	23.1	25.8	74.1
Economics	140	16.1	17.9	92.1
Art & Design	17	2.0	2.2	94.2
Drama	11	1.3	1.4	95.6
Music	7	0.8	0.9	96.5
Foreign Language	8	0.9	1.0	97.6
General Course ('Liceus')	10	1.2	1.3	98.8
General Course (Admi. & Commerce)	9	1.0	1.2	100.0
Not known	89	10.2	missing	
Total	869	100.0	100.0	

It was pointed out above (see Chapter 5, p. 171) that geography is optional for the 11th year of the 'study area' of Natural Sciences', compulsory for the 10th and 11th years of the 'specialist area' of Planning and Urbanization of the 'study area' of Economic and Social Sciences and optional for the 10th or 11th years of the study area of Humanities.

11.9% of the sample had attended the 'study area' of Natural Sciences and 42.8% this of Humanities. So 54.7% of the sample could have attended geography during the 10th or the 11th years. But geography is optional and only a small

Table 6.55

Distribution of 12th year students by 'study area'
followed in the 10th and 11th years

'Study area'	F	%	Valid %	Cumulative %
Natural Sciences	103	11.9	12.2	12.2
Technological Sciences	12	1.4	1.4	13.6
Economic and Social Sciences	333	38.3	39.4	53.0
Humanities	372	42.8	44.0	97.0
Art	9	1.0	1.1	98.1
Complementary Course ('Liceus')	10	1.2	1.2	99.3
Complem. Course (Adm. & Account.)	5	0.6	0.6	99.9
Complem. Course (Industry)	1	0.1	0.1	100.0
Not known	24	2.8	missing	
Total	869	100.0	100.0	

percentage of these students attended the subject; only three students had attended the 'specialist area' of Planning and Urbanization and thus had geography in the 10th and 11th years; students who followed Complementary Courses (from prior educational reforms) could also have attended geography classes.

These remarks show evidence that students who followed geography in the 12th year had a very different background (two years, one year or no geography in the 10th and 11th years).

In Table 6.57 is shown the distribution of students by 'study area' followed in the 12th year.

Geography is optional for the first, second and third courses (the first course prepares among others, for the following Higher Education courses: Natural Sciences, Agriculture, Medicine, Pharmacy, Veterinary, Engineering, Exact Sciences,...; the second course for Economics, Management, Administration, Mathematics, Computer Science, Engineering, Geography,...; the third course for Humanities courses, Languages courses, Law,...).

Table 6.56

Distribution of 12th year students by 'specialist area'
followed in the 10th and 11th years

'Specialist area'	F	%	Valid %	Cumulative %
Agriculture	4	0.5	0.5	0.5
Health	73	8.4	9.9	10.4
Sports	18	2.1	2.4	12.9
Electronics	4	0.5	0.5	13.4
Building	7	0.8	0.9	14.3
Secretariat	40	4.6	5.4	19.8
Administration & Accountancy	245	28.2	33.2	52.9
Computer Science	24	2.8	3.2	56.2
Planning & Urbanism	3	0.3	0.4	56.6
Journalism & Tourist Trade	114	13.1	15.4	72.0
Public Administration	193	22.2	26.1	98.1
Music	6	0.7	0.8	98.9
Art	8	0.9	1.1	100.0
Not known	130	15.0	missing	
Total	869	100.0	100.0	

Table 6.57

Distribution of students by 'study area' followed in the
12th year

'Study area'	F	%	Valid %	Cumulative %
First Course	108	12.4	12.8	12.8
Second Course	303	34.9	35.9	48.8
Third Course	432	49.7	51.2	100.0
Not known	26	3.0	missing	
Total	869	100.0	100.0	

The questionnaire also asked for the subjects students studied in the 12th year as well as geography. Students should study two other subjects in the 12th year. Tables 6.58 and 6.59 shows the subjects students studied in the 12th year.

Table 6.58

Compulsory subjects students studied in the 12th year

Subjects	F	%	Valid %	Cumulative %
Mathematics	405	46.6	48.0	48.0
Philosophy	438	50.4	52.0	100.0
Not known	26	3.0	missing	
Total	869	100.0	100.0	

Table 6.59

Other subjects students studied in the 12th year

Subjects	F	%	Valid %	Cumulative %
Physics	6	0.7	0.7	0.7
Chemistry	9	1.0	1.1	1.8
Biology	80	9.2	9.4	11.2
Geology	1	0.1	0.1	11.3
Descriptive Geometry	15	1.7	1.8	13.0
History	653	75.1	76.6	89.6
French	38	4.4	4.5	94.0
English	50	5.8	5.9	100.0
Not known	17	1.9	missing	
Total	869	100.0	100.0	

Mathematics is compulsory for the first and second courses, philosophy for the third course; 75.1% of the students followed history. History is an optional

subject for second and third courses.

It was pointed out above (see p. 172-173) that geography syllabuses for the 10th and 11th years vary according to area of study: physical geography for the Natural Sciences area; human and economic geography for the Economic and Social Sciences area and Humanities area, but the 12th year syllabuses is the same for the first, second and third courses.

Students were also asked if they had studied geography or not in the 9th, 10th and 11th years of schooling. Table 6.60 shows the percentages of students who attended geography in the 9th, 10th and 11th years. (The study of geography was abolished from the 9th year and re-established in 1980/81. Some older students had been in the 9th year before 1980/81).

Table 6.60

**Percentages of 12th year students who had studied
Geography in the 9th, 10th and 11th years**

Geography \ Years	9th	10th	11th
	%	%	%
Yes	74.2	8.4	12.2
Not	23.1	82.3	78.6
Not known	2.7	9.3	9.2
Total	100.0	100.0	100.0

It was pointed out above that the geography syllabus is the same for all 12th year students, nevertheless the previous tables show evidence that students had a very different background.

Choosing Geography in the 12th year

The questionnaire asked for the most significant reasons influencing students' choice of geography in the 12th year. A structured format was used in which the respondent was asked to indicate the importance of eighteen statements representing the most likely reasons for influencing students' choice of geography in the 12th year. The list of reasons which might have influenced students' choice was not

exhaustive, so provision was made to permit students to specify and rate other reasons which did not appear on the list but were significant to them. Nevertheless the range of eighteen reasons was carefully considered.

A five point scale was used to measure the importance of each reason. Students were asked to rate the relative importance of each of these reasons according to the scale.

Key to scale: 1 = not important; 2 = of little importance;
 3 = important; 4 = very important;
 5 = of fundamental importance.

The results are presented in Table 6.61.

The mean scores of the reasons enable comparisons between them.

The reasons which were considered to be important, very important or of fundamental importance by more than 50.0% of the students were the following ones (in descending order of importance):

- (6) - geography helps me to understand social and economics problems of the world of today (73.5%);
- (3) - geography helps me to understand problems concerning the preservation of the environment (69.3%);
- (5) - geography helps me to understand social and economic problems of Portugal (62.9%);
- (10) - geographical knowledge will be useful in my day to day life (62.9%);
- (1) - I enjoyed studying geography in previous years (61.1%);
- (4) - I would like to know more about human geography (59.5%);
- (9) - geographical knowledge will be useful for my career or job (53.4%).

Other reasons considered to be important, very important or of fundamental importance by more than one fourth of the students were the following ones:

- (11) - geography fitted in with other subjects I am attending (38.8%);
- (7) - I had good marks in geography in previous years (38.7%);
- (2) - I would like to know more about physical geography (35.8%);

Table 6.61

Reasons for choosing geography in the 12th year (in %)

Reasons	Not impor- tant	Of little impor- tance	Impor- tant	Very impor- tant	Of funda- mental impor- tance	No answe-r ed	Total	Mean	Mode	Stand. Dev.
1 - I enjoyed studying geography in previous years	10.9	21.4	43.4	11.0	6.7	6.6	100.0	2.8	3	1.030
2 - I would like to know more about physical geography	25.3	33.4	26.0	7.2	2.6	5.4	100.0	2.2	2	1.021
3 - Geography helps me to understand problems concerning the preservation of the environment	8.1	19.2	41.1	20.0	8.2	3.5	100.0	3.0	3	1.039
4 - I would like to know more about human geography	13.7	22.6	37.6	15.2	6.7	4.3	100.0	2.8	3	1.094
5 - Geography helps me to understand social and economic problems of Portugal	12.0	21.2	36.5	17.4	9.0	4.0	100.0	2.9	3	1.125
6 - Geography helps me to understand social and economic problems of the world of today	6.3	16.2	38.9	24.1	10.5	4.0	100.0	3.2	3	1.045
7 - I had good marks in geography in previous years	25.7	25.9	27.2	9.1	2.4	9.8	100.0	2.3	3	1.069
8 - I would like to study geography at University	58.3	16.1	10.7	3.8	2.9	8.2	100.0	1.7	1	1.041
9 - Geographical knowledge will be useful for my career or job	17.0	24.6	33.0	12.5	7.9	4.8	100.0	2.7	3	1.158
10 - Geographical knowledge will be useful for my day to day life	10.4	22.3	39.9	15.9	7.1	4.4	100.0	2.9	3	1.056
11 - Geography fitted in with other subjects I am attending	30.1	26.1	22.9	9.7	6.2	4.9	100.0	2.3	1	1.204
12 - The Careers Adviser advised me to take geography	81.6	5.6	2.9	0.7	0.9	8.3	100.0	1.2	1	0.617
13 - The geography teacher I had in the 11th year advised me to take geography in the 12th year	81.7	2.6	1.4	0.6	0.1	13.6	100.0	1.1	1	0.410
14 - My parents or one of my friends advised me to take geography	70.3	12.8	6.9	1.4	0.6	8.1	100.0	1.4	1	0.739
15 - Geography was the only subject that fitted my timetable	76.5	8.6	3.5	0.9	1.5	9.0	100.0	1.3	1	0.728
16 - I thought geography was the easiest available option	38.1	23.9	19.0	6.0	6.4	6.6	100.0	2.1	1	1.213
17 - I thought geography would be easy	38.0	25.7	20.1	5.2	2.6	8.4	100.0	2.0	1	1.059
18 - My friends took geography	68.6	13.6	6.8	1.2	0.5	9.4	100.0	1.4	1	0.720
19 - Others	0.2	0.0	2.2	2.1	10.4	85.2	100.0	4.5	5	0.858

(16) - I thought geography was the easiest available option (31.4%);

(17) - I thought geography would be easy (27.9%).

The other reasons seem to be less important: to study geography at university; geography was the only subject that fitted the timetable or the advice of a) the teacher of geography of the previous year (in fact only a minority studied geography in the 11th year); b) the Careers Adviser; c) parents or a friend; as well the fact that friends had taken geography.

It was pointed out above that the list of reasons which might have influenced students' choice was not exhaustive, so 14.7% of students indicated other reasons that they considered important, very important or of fundamental importance. The most stated were the following ones: they would like to have attended another subject but it was not available in school and they were obliged to take geography (81 students); geography was compulsory for the course they would like to enroll in university level (29 students); they liked or they liked geography very much (27 students); and geography was the most interesting option (23 students).

Thus, according to 12th year students they chose geography mainly because it helped them to understand problems of the world of today, of the environment, of Portugal and geographical knowledge is useful to their day to day life and will be useful in their careers or jobs.

Aspects of Geography

Students were asked to indicate their interest in the different aspects of geography that they were studying or had studied before. Due to the fact that the majority of students had not studied geography in the 10th and 11th years and about 23% had not studied the subject in the 9th year, the results concerning the aspects included in the 12th year syllabuses seemed more significant. The results are presented in Table 6.62.

A four point scale was used to measure students interest in the different aspects of geography.

Key to scale:	1 = no interest;	2 = little interest;
	3 = sufficient interest;	4 = much interest.

Table 6.62
12th year students' Interest in the different aspects of geography (In %)

Aspects	None	Little	Suffici- ent	Much	No respon- se	Total	Mean	Mode	Median	Stand. Dev.
<u>History of Geography</u>	9.0	45.2	21.6	18.4	5.8	100.0	2.5	2	2	0.912
<u>Physical Geography</u>										
<u>Human/Economic Geography</u>										
<u>Regional Geography</u>										
Map work	7.5	28.8	37.1	23.6	3.1	100.0	2.8	3	3	0.898
Graph work	6.7	29.5	36.7	23.5	3.7	100.0	2.8	3	3	0.887
Fieldwork	8.6	23.1	30.1	30.7	7.4	100.0	2.9	4	3	0.972
Other	0.0	0.2	0.3	0.7	98.7	100.0	3.4	4	4	0.809

The results presented in Table 6.62 show evidence that more than 75% of the students had sufficient or much interest in the study of the following aspects of geography (in descending order): geography of population (85.0%); geography of industry (82.2%); urban geography (81.3%); rural geography (81.0%); economic geography (75.2%); geography of Portugal (75.0%). Thus it seems that the majority of students were specially interested in studying human and economic aspects and the geography of Portugal.

More than 50% also had sufficient or much interest in studying the great regions or continents (73.9%); other countries than Portugal (70.6%); geography of commerce and transport (70.5%); (to do) fieldwork (60.8%); map work (60.7%); graph work (60.2%); climatology (57.8%); meteorology (54.9%); however, less than 50% said they had sufficient or much interest in the following aspects: biogeography (44.4%); geomorphology (42.9%); history of geography (40.0%); the region where the school was located (39.4%).

Some reasons might account for these answers:

- The majority of students were following the second and third courses of the 12th year (84.6%) that mainly prepared them for economics, administration, management and humanities courses at university level. Obviously these students preferred to study human and economic aspects of geography.
- The 12th year syllabus did not include the study of physical geography and many of these students only studied it some years before.
- The study of the history of geography is included in the 12th year syllabus but the majority of students were not interested in it. In fact, on the one hand students did not have the needed geographical knowledge to understand the interest of this study (probably the study of the history of geography should only be done at university level) and on the other hand teachers seldom linked this study with the other topics included in the syllabus.
- The majority of the sample were also not interested in studying the region where the school was located (9th year pupils did not like to study it either). Usually this study is not done at 12th year level. 9th form pupils did not like studying the local area and it is likely that this attitude remains when they are in the 12th year (see p. 266-268).

- Although about 60% of the sample say that they have sufficient or much interest in fieldwork 31.7% of the students had no or little interest in it. In fact students did very little fieldwork in geography (see teachers' questionnaires, p. 242).

Relevance of Geographical Knowledge

The questionnaire also asked for the students' opinion about the importance of geographical knowledge in day to day life.

A five point scale was used.

Key to scale: 1 = not important; 2 = of little importance;
 3 = important; 4 = very important;
 5 = of fundamental importance.

The results are presented in Table 6.63.

Table 6.63

12th year students' opinion about the importance of geographical knowledge in day to day life

Opinion	F	%	Valid %	Cumulative %
Not important	10	1.2	1.2	1.2
Of little importance	84	9.7	10.0	11.2
Important	438	50.4	52.4	63.6
Very important	231	26.6	27.6	91.3
Of fundamental importance	73	8.4	8.7	100.0
Not known	33	3.8	missing	
Total	869	100.0	100.0	

For 85.4% of the sample (Valid percentage 88.7%) geographical knowledge was important, very important or of fundamental importance in day to day life.

The questionnaire also asked students to give reasons why geographical

knowledge was or was not important in day to day life. It was an open question.

The most quoted reasons were the following ones (in descending order):

- geographical knowledge helps to understand the world - its physical, human, social and economic phenomena and the problems of today (253 responses - 26.0% of responses - 36.1% of cases);
- geographical knowledge belongs to 'general culture' (109 responses - 11.2% of responses - 15.6% of cases);
- geographical knowledge is indispensable to understanding problems, phenomena or events (89 responses - 9.1% of responses - 12.7% of cases);
- geographical knowledge helps to understand the environment (or the space) around (76 responses - 7.8% of responses and 10.9% of cases).

Students who said that geographical knowledge was not useful in day to day life indicated the following reasons:

- the kind of knowledge acquired in geography classes is only theoretical (22 responses - 2.3% of responses - 3.1% of cases);
- geographical knowledge is not relevant for my future career/job (19 responses - 2.0% of responses - 2.7% of cases);
- geographical knowledge is merely 'general culture' (14 responses - 1.4% of responses - 3.1% of cases).

The following item asked students to state the contributions of geography to youth education. It was also an open question.

Most of the statements were similar to those of the previous item:

- geography helps to understand the world (244 responses - 28.1% of responses - 45.7% of cases);
- geography helps to understand the environment (or the space) around (92 responses - 10.6% of responses - 17.2% of cases);
- geography helps to participate in the preservation of the environment

(77 responses - 8.9% of responses - 14.4% of cases);

- geographical knowledge is useful in day to day life (55 responses - 6.3% of responses - 10.3% of cases);

- geographical knowledge belongs to 'general culture' (51 responses - 5.9% of responses - 9.6% of cases);

- geography helps to know Portugal and understand its problems (33 responses - 3.8% of responses - 6.2% of cases).

Geography Teaching

The questionnaire also asked for the students' opinions about how to improve geography teaching in the Unified General Course (7th, 8th and 9th years of schooling) and in the Complementary Course (10th and 11th years) and in the 12th year. They were open questions.

It was pointed out above that 23.1% of students did not have geography classes in the 9th year of schooling and some state that they could not remember geography teaching at this level. Nevertheless, 510 students (58.8%) answered this question. There were a large variety of suggestions on how to improve geography teaching in the Unified General Course. These suggestions are presented in Table 6.64.

In relation to the 10th, 11th and 12th years of schooling, it was also pointed out above that only a small percentage of students attended geography in the 10th and 11th years (respectively 8.4% and 12.2%). Many students stated that their suggestions concerned only the 12th year. Table 6.65 presents these suggestions.

Suggestions made by 12th year students seem mainly to indicate the need to do a more active teaching, organize outdoor activities and use a variety of teaching resources, as well as to modify the existent syllabuses.

The questionnaire also asked students to make other comments and suggestions about geography teaching. They were open questions. Only 36 students made other comments. The most frequent was 'geography is an interesting subject' (19 responses - 21.3% of responses - 25.0% of cases).

Table 6.64

**12th year students' suggestions for improving geography teaching
in the Unified General Course (7th, 8th and 9th years)**

Suggestions	F	% of responses	% of cases
More active teaching	194	21.3	37.4
Modify syllabuses	100	11.0	19.5
Outdoor classes	80	8.8	15.7
Study visits and excursions	73	8.0	14.3
More use of audio-visual media	66	7.3	12.9
Motivate pupils	49	5.4	9.6
Better qualified teachers	42	4.6	8.2
Study some topics in more depth	32	3.5	6.3
Reduce syllabuses content (a)	30	3.3	5.9
Use more teaching resources	25	2.7	4.9
Several, concerning teaching strategies and resources	25	2.7	4.9
Group work	24	2.6	4.7
Several, concerning the subject	23	2.5	4.5
More frequent use of maps, globe, graphs	21	2.3	4.1
More pupil participation in classes	18	2.0	3.5
Whole class discussion of topics	13	1.4	2.5
Several, concerning relations teachers-pupils	13	1.4	2.5
Open ended enquiry	12	1.3	2.3
Study current events	11	1.2	2.2
Others	59	6.5	11.8
Total	910	100.0	177.7 (b)

(Respondents 510, corresponding to 58.8% of the sample)

(a) - Two students gave as alternative to increase the number of teaching hours per week.

(b) - Some students gave more than one response.

Table 6.65

**12th year students' suggestions for improving geography
teaching in the 10th, 11th and 12th years**

Suggestions	F	% of responses	% of cases
Reduce syllabuses content (a)	213	19.6	34.5
More active teaching	160	14.8	25.9
Modify syllabuses	126	11.5	20.5
Study some topics more in depth	104	9.6	16.9
Study visits and excursions	64	5.9	10.4
Outdoor classes	56	5.1	9.1
More use of audio-visual media	45	4.1	7.3
Group work	30	2.8	4.9
Open ended enquiry	28	2.6	4.5
Use more teaching resources	26	2.4	4.2
Adequate bibliography	25	2.3	4.1
Several, concerning teaching strategies and resources	24	2.2	3.9
Motivate students	22	2.0	3.6
More teaching hours per week	20	1.8	3.2
Whole class discussion of topics	20	1.8	3.2
Study current events	20	1.8	3.2
More student participation in classes	18	1.7	2.9
Better qualified teachers	15	1.4	2.4
Several concerning the subject	12	1.1	1.9
Textbook with the whole syllabus content	11	1.0	1.8
More frequent use of maps, globe, graphs	10	0.9	1.6
Study Portugal	10	0.9	1.6
Others	30	2.8	4.9
Total	1 089	100.0	176.5 (b)

(Respondents 617, corresponding to 71.0% of the sample)

(a) - Twenty eight students gave as an alternative, to increase the number of teaching hours per week.

(b) - Some students gave more than one response.

Suggestions were made by 192 pupils, their suggestions did not differ from those presented in the previous tables. The results are presented in Table D3.7 (see Appendix D3, p. 513).

Definition of Geography

The questionnaire also asked students to give a definition of geography. 94.8% of the students gave a definition of geography. The coding of the responses was difficult.

In descending order of frequency the definitions were the following ones:

1. Geography studies different aspects (or phenomena) of the Earth's surface (160 cases).
2. Geography studies the relationships between Man and the environment (or Nature, space, landscape, the Earth's surface) (159 cases).
3. Geography studies natural and human aspects of the Earth's surface and the relationships between these phenomena (108 cases).
4. Geography studies physical and human aspects of the Earth's surface (104 cases).
5. Geography studies natural and human landscapes (61 cases).
6. Geography studies the spatial organization of the Earth's surface (52 cases).
7. Geography studies the environment where Man lives (or around) (46 cases).
8. Geography studies physical and human aspects (45 cases).
9. Geography studies the Earth (or the Globe) and its population (or Man) (19 cases).
10. Geography studies world problems (11 cases).

In this list the definitions with a number of cases superior to 10 were only included.

The definitions 4, 5, 8 and 9 correspond to the same concept, geography studies physical and human aspects of the Earth's surface.

In definitions 2 and 3 the relationships between the natural and human aspects or between Man and the environment (or Nature, space, landscape, the Earth's surface) are emphasized.

In definition 2 the words environment, Nature, space or landscape are employed with the meaning of the physical parts of the Earth's surface.

In definition 7 geography appears as a science the object of which, is the study of the environment.

In definition 6 geography appears as the study of the spatial organization of the Earth's surface.

In pages 271-275 the definitions given by 9th year pupils were mentioned. For the majority of 9th year pupils the object of geography is the study of physical and human aspects of the Earth's surface. This definition of geography is also given by many 12th year pupils.

Geography as the study of the environment is only mentioned by a minority of 9th year pupils and only in 4.5% of the cases is it mentioned by 12th year pupils.

Only a minority of 9th year pupils stressed the fact that geography studies the relationships between Man and the environment. The study of relationships between Man and the environment or between natural and human aspects appears in 267 responses given by 12th year students (26.8% of cases).

Geography as the study of the spatial organization of the Earth's surface does not appear in any definition given by 9th year pupils. This definition appears in 52 responses given by 12th year students, which corresponds to 5.2% of the cases.

In the 12th year syllabuses the concept of spatial organization is stressed. It seems that this definition should appear in a much bigger percentage of cases.

Some examples of 12th year students definitions are presented below:

- 'Ciência que estuda a superfície terrestre, a distribuição dos fenómenos físicos, biológicos e humanos, a interpretação das causas dessa

distribuição, as relações entre os fenómenos e a sua evolução no espaço e no tempo’.

- ‘É a ciência que estuda as relações entre o Homem e o meio’.
- ‘Geografia é uma ciência que estuda as paisagens naturais e humanas’.
- ‘Geografia é o estudo do espaço físico e do espaço humano (onde vive o Homem)’.
- ‘Geografia é o estudo da organização espacial tendo em conta os elementos naturais e humanos e a sua inter-relação como forma de compreendermos as modificações que ocorrem no espaço’.
- ‘É uma ciência que estuda o meio onde o Homem está inserido’.
- ‘É uma disciplina que estuda os problemas, tanto físicos como humanos à superfície da Terra’.

Future Plans

The questionnaire asked for students to say what they intended to do after leaving school. Students career intentions are presented in Tables 6.66 and 6.67.

Table 6.66

12th year students' career intentions

Intentions	F	%	Valid %	Cumulative %
1 - University	566	65.1	66.6	66.6
2 - Other Higher Education courses (than University)	109	12.5	12.8	79.4
3 - To get a job	81	9.3	9.5	88.9
4 - 1 or 2	82	9.4	9.6	98.5
5 - 1 or 3	2	0.2	0.2	98.7
6 - 2 or 3	10	1.2	1.2	100.0
Not known	19	2.2	missing	
Total	869	100.0	100.0	

Table 6.67**12th year students' career intentions**

Intentions	F	%
<u>Higher Education</u>		
<u>University</u>		
Economics/Management	177	20.4
Humanities	167	19.2
Law	147	16.9
Computer Science	28	3.2
Natural Sciences	14	1.6
Medecine and Pharmacy	14	1.6
Geography	13	1.5
Physical Education	11	1.3
<u>Other Higher Education Courses (than University)</u>		
Primary Education Teacher	42	4.8
Infant Education Teacher	32	3.7
Management Courses	22	2.5
Art, Music, Drama	10	1.2
<u>To get a job</u>		
Services	56	6.4
<u>Others</u>		
Careers with a frequency <10	117	13.5
Not known	19	2.2
Total	869	100.0

12th year students intended to take up a great diversity of careers. What they eventually ended up doing is obviously often different from what they were hoping to do. Nevertheless about 60.5% intended to study Economics, Management, Law and Humanities (Geography included). Only 1.5% were intending to go on to follow

a geography course at University. Geography does not give access to a variety of careers. (The teaching profession is still the main career open to bachelors in geography. The minority who got a job other than teaching, worked mainly in planning or in public administration).

Further Analysis of Questionnaire Data

Cross-tabulations and chi-squared tests of independence between selected cross-tabulated variables were undertaken.

The aims of these tests were to show evidence of significant differences of students' attitudes and opinions about geography according to the schools' district location, students' age, sex and 12th year course.

The results concerning the reasons for choice of geography are presented in Tables D3.8, D3.9 and D3.10 (see Appendix D3, p. 514-516).

The most significant features of these tests were:

- a) There were statistical probabilities of dependence between the variables schools' district location, students' sex and 12th year course and some reasons for choosing geography in the 12th year.

Among the significant features tests showed statistically significant differences between students according to:

- Schools' district location -

Differences are difficult to explain (see Appendix D3, p. 521).

- Gender -

More boys than expected, stated that the following reasons were important, very important or of fundamental importance for choosing geography: 'I would like to know more about physical geography' (nevertheless the 12th year course does not include the study of physical geography); 'I would like to study geography at University'; 'The Careers Adviser advised me to take geography'; 'My friends took geography'. In contrast, fewer girls than expected stated that these above reasons were important, very important or of fundamental importance for choosing geography.

More boys than expected stated that a very important or of fundamental importance reason for taking geography was 'I thought geography was the easiest available option'. More girls than expected stated this reason as important but fewer than expected stated that it was very important or of fundamental importance.

- 12th year course (first, second and third - see p. 284) -

More students than expected from the first course stated as important, very important or of fundamental importance, reasons influencing their choice as the following ones: 'I enjoyed studying geography in previous years'; 'I would like to know more about physical geography'; 'Geography helps me to understand problems concerning the preservation of the environment'; 'I would like to study geography at University'; 'Geographical knowledge will be useful for my career'; 'Geographical knowledge will be useful for my day to day life (very important or of fundamental importance); and 'I thought geography would be easy'.

More students than expected from the third course stated as important, very important or of fundamental importance factors influencing their choice as the following ones: 'I enjoyed studying geography in previous years'; 'Geography helps me to understand problems concerning the preservation of the environment'; 'I would like to know more about human geography'; 'Geographical knowledge will be useful for my day to day life'; and 'Geography fitted in with other subjects I am attending'.

Fewer students than expected from the second course stated that all the above reasons were important, very important or of fundamental importance in taking geography in the 12th year. In fact 31.0% of the second course students stated that they would have liked to attend another option but it was not available in their school and consequently they were obliged to take geography, or that geography was compulsory for the course they would like to enroll in at university level.

- The tests also showed that the reasons for choice of geography were not statistically dependent upon students' age.

- b) Chi-squared tests of independence between other cross-tabulated variables; schools' district location, age, sex and 12th year course, and level of interest in studying several aspects of geography were also done.

The results are summarized in Tables D3.11 a, b, c and d (see Appendix D3, p. 517-520).

Significant features of these tests were as follows:

- There is a statistical probability of relationship between the schools' district location and students' level of interest in studying some aspects of geography. For instance, more students than expected from the districts of Aveiro, Braga, Bragança, Castelo Branco, Évora, Faro, Guarda, Vila Real and Viseu had sufficient or much interest in studying the region where the school was located. Fewer students than expected from the districts of Coimbra, Lisboa, Porto, Santarém, Setúbal and Viana do Castelo had sufficient or much interest in studying it.
- There is a statistical probability of relationships between the students' age and their level of interest in studying some aspects of geography. For example, more students than expected of 20 years or more had sufficient or much interest in studying history of geography and geography of population. Fewer students than expected aged 19 or less, had sufficient or much interest in studying these two aspects.
- There is a statistical probability of relationship between the students' sex and their level of interest in studying some aspects of geography. More girls than expected had sufficient or much interest in studying geography of population, rural geography, geography of Portugal and the region where the school was located. There were significantly more boys than expected that liked to do map and graph work. At 9th year level more girls than expected also liked to study aspects quoted above and more boys than expected liked to do map and graph work.
- There were also statistical probabilities of dependence between the 12th year course students were following and the level of interest in studying some aspects of geography. More students than expected who were following the first course had sufficient or much interest in studying morphology, climatology, biogeography, rural geography, great regions or continents and to do map, graph and fieldwork. Fewer students than expected from this course had sufficient or much interest in studying the history of geography, geography of population, economic geography and geography of Portugal.

More students than expected who were following the second course had sufficient or much interest in studying economic geography and doing map and graph work. Fewer students than expected had the same level of interest in history of geography, climatology, biogeography, geography of population, rural geography, the study of great regions and continents, the geography of Portugal and doing fieldwork.

More students than expected who were following the third course had sufficient or much interest in studying history of geography, biogeography, geography of population, rural geography, great regions or continents and the geography of Portugal and fewer than expected had the same level of interest in studying climatology, economic geography and doing map, graph and fieldwork.

The 12th year syllabus is the same for the three courses. These results seem to justify the idea of having different syllabuses for each of the three courses. This problem will be discussed later on.

- c) Chi-squared tests of independence between the variables schools' district location, students' age, sex, 12th form course, future plans and the students' opinion about the relevance of geographical knowledge in the day to day life were also done.

The results are summarized in Table D3.12 (see Appendix D3, p. 521).

- There are statistical probabilities of dependence between the variables schools' district location and 12th year course and students' opinion about the relevance of geographical knowledge in day to day life.
- Students' opinion about the relevance of geographical knowledge in day to day life is not statistically dependent upon students' age, sex and future plans.

Conclusions

Some of these findings, specially reasons for choosing geography; level of interest in studying the different aspects of geography, comments on the relevance of geographical knowledge, suggestions on how to improve geography teaching, as well as differences between students, seem important.

12th year students chose geography mainly because the subject helps them to understand social, economic and environmental problems of the world of today in general, and of Portugal in particular; because they would like to know more about human geography, and because geography is useful to their lives or their future careers.

As well as reasons concerning timetable organization, the previous enjoyment of geography classes and the relative easiness of learning geography are important. More than one third of students also mentioned that they would like to know more about physical geography.

There are some aspects of geography that students prefer rather than others.

The reasons why students chose geography and the preference for different aspects of geography varies according to students' school location, sex, age, course.

Again, this has implications for syllabus design and geography teaching. World realities and problems should be brought to geography classes; syllabuses must give the possibility of adapting teaching to students' different needs and interests.

Syllabuses for evening classes should not be the same for day classes. Students' interests differ according to their age.

Students' interests also vary according to their course, this would imply the need for different syllabuses or the design of syllabuses that include different aspects of geography and allow the treatment of different world problems (social, economic and environmental) in learning geography.

Students' different background must obviously be taken also in account by curriculum planners. This has implications not only for syllabuses design, but also for the organization of the secondary education curriculum.

CHAPTER 7

Schools' Realities - Interviews with
Heads of Geography Departments
(‘Professores Delegados de Disciplina’)

7.1 Introduction

The analysis of data from the questionnaire survey, presented in the previous Chapter, gave a description of the situation that geography teachers worked in schools, how they worked, their opinions about the geography curriculum and the constraints that they had to work with. It seemed useful to do a more intensive study of a few cases that would permit an examination in greater depth of the present situation and of the process of curriculum planning that takes place in schools.

According to Walker (1974 a, p. 21) case study research 'attempts to reach understanding through the detailed study and portrayal of individual instances, persons, ideas, institutions and events'.

Lincoln and Guba (1985, p. 361) note that case studies can be written with different purposes in mind, among them, to chronicle (to record temporally and sequentially, as in a history), to render (as in a description or to provide vicarious experience), to test as a trial for certain theories and hypothesis. They may be written at different analytical levels: factual, interpretative or evaluative, with each presupposing the former. Consequently, case studies will, depending on the purpose and level, demand different actions from the inquirer and result in different products.

It was decided that to collect up to date factual information about the situation of teaching geography in secondary schools and specially about curriculum planning at school level, the most appropriate approach was to conduct interviews with heads of geography departments (HOD).

According to Tuckman (1978, p. 196) questionnaires and interviews make it possible to measure what a person knows (knowledge or information), what a person likes and dislikes (values and preferences), and what a person thinks (attitudes and beliefs).

Cohen and Manion (1980, 1989, p. 301-302) note that a number of problems appear to attend the use of the interview as a research technique. These problems concerned specially, validity and reliability. According to the same authors 'perhaps

the most practical way of achieving greater validity is to minimize the amount of bias as much as possible. The sources of bias are the characteristics of the interviewer, the characteristics of the respondent, and the substantive content of the questions. More particularly, these will include: the attitudes and opinions of the interviewer; a tendency for the interviewer to see the respondent in his own image; a tendency for the interviewer to seek answers that support his preconceived notions; misperceptions on the part of the interviewer of what the respondent is saying, and misunderstandings on the part of the respondent of what is being asked'.

The researcher-interviewer was aware of these problems.

For the researcher one of the great merits of interviews is the ability to reduce to a minimum, the problems of misperceptions of what is asked and responded, specially in this case, in which the interviewer, a teacher, was interviewing other teachers. The problems concerning the characteristics of the interviewer and of the respondent seem more difficult to deal with, but the interviewer was aware of the possible problems and attempted to guard against their interference.

Due to the practicalities of access, it was decided to restrict the sample to the districts of Lisboa and Évora, districts that according to the questionnaire survey, present important differences in the situation of geography teaching in schools (see Table 6.19, p. 235). In these districts the HOD of eight schools (four from each district) were approached by telephone. Three schools were located in Lisboa, one in the suburbs of the city, three in Évora and another in a small town of the same district. The eight HOD agreed to be interviewed. In order to encourage HOD to express their opinions freely, it was stressed that the purpose of the study was a PhD thesis.

Many authors have stressed the need to establish a trusting relationship between the interviewer and interviewee (Walker, 1974 b; MacDonald and Walker, 1975). Simons (1981, p. 33-34) suggests several working principles for interviewing: 'to establish confidence and trust so that people will speak freely'; to motivate the interviewees to participate; to demonstrate 'empathy with the interviewees' concerns'; to offer confidentiality 'if this convention has meaning for them; to 'try to dispossess them of any notions that you are the expert'; to ask 'questions which touch on their concerns and which are open-ended enough to allow them scope to reply fully'. Again the interviewer was aware of this, and interviews took place in a very friendly atmosphere.

To collect information about the situation of teaching geography in schools, a standardized schedule was used. Set questions were asked and recorded in the schedule (see Appendix E, p. 525-528).

To collect information about planning at school level a less formal interview was adopted. The interviewer had pre-prepared a list of the points to be covered during the interview, but their sequence could be altered and other points could be added to them. To record this part of the interview a tape-recorder was used. (Only one teacher did not want to use the tape-recorder).

The standardized schedule included questions about the school, type and number of pupils (day and evening classes); geography teaching by years and 'specialist areas' (day and evening classes); the geography staff (academic and training qualifications, existence or not of a teacher in charge of teacher training, participation and collaboration in curriculum development); the geography department (existence or not of a specially equipped geography room, use of the geography room, teaching resources, departmental allowance, textbooks adopted for geography teaching; the HOD qualifications and professional experience (sex, age, academic and training qualifications, years in teaching, has he/she been in charge of teacher training or not, participation and collaboration in curriculum development and in-service training, participation in teachers' associations).

The points concerning planning at school level included the planning process; content organization, the learning process; pupils assessment; evaluation; factors influencing curriculum development and constraints; future development.

Finally questions about the new official syllabuses, that will be on trial in the next school years, in some schools, were also included.

The interviews took place in July 1990, and the collected information concerned mainly the school year 1989/90. Four interviews were conducted in schools, the other four outside school, all in a quiet and informal atmosphere (pupils were already on summer holidays). Once the interviews had been done they were written up, and typed. In this work the interviews have not been transcribed as verbatim accounts, but in the text the summary of each interview is set out, which contains the views expressed by the HOD concerned.

In order to prevent the reader from a repetitive presentation of the eight interviews, they are included in Appendix E (p. 529-574) and in the main text of this work a summary of the main overall findings of the interviews and a conclusion in which the implications of these findings for curriculum development in geography in Portuguese schools are presented.

7.2 The Interviews - Summary and Conclusion

The eight interviews showed evidence of the main problems facing geography teaching at secondary school level, the role of the head of the department and the planning process at school level.

The following main points arose from the interviews:

Problems facing geography teaching

- a) Probably the main problem facing geography teaching was that of geography teachers without a degree in geography and without teacher training in the subject. Table 7.1 shows the distribution of teachers by academic and training qualifications in the eight schools and shows evidence that in 1989-1990 there were still a large number of teachers without adequate academic and/or training qualifications in geography (2, 3 and specially 4).
- b) Attendance of in-service courses in designing the curriculum and for topics related to geography appears to be very limited, with the exception of courses concerning environmental education.
- c) Other problem concerned the insufficiency of equipment and resources for teaching geography:
 - one school (A) had no room allocated for geography teaching; one had only a small room (school H); six had one room; two had two rooms. With the exception of one school (C) the geography room(s) was (were) not exclusively used for teaching geography;
 - with the exception of school G that was scarcely equipped for geography teaching, other schools had a variety of teaching resources, but the fact that four schools had more than one thousand students (C, E, F and H) and three, more than two thousand students (B, D and G) resulted in serious problems of management of teaching equipment and resources because several geography teachers taught at the same time;
 - one school (B) had not even a small library for geography teaching but intended to buy some specialist books in geography with the 1989/90 departmental allowance;
 - with the exception of two schools (A and H) and partially of schools (E and F) all the other schools had free reprographic facilities limited for assessment tests;

Table 7.1**Distribution of teachers by academic and training qualifications**

Qualifications	Districts				Total	
	Lisboa		Évora			
	F	%	F	%	F	%
1	22	52.4	10	45.5	32	50.0
2	12	28.6	3	13.6	15	23.4
3	2	4.8	-	-	2	3.1
4	6	14.3	9	40.9	15	23.4
Total	42	100.0	22	100.0	64	100.0

Qualifications:

- 1 - Teachers with a degree in geography and teacher training ('professores profissionalizados')
- 2 - Teachers with a degree in geography but who were undergoing teacher training ('professores em formação')
- 3 - Teachers with a degree in geography but without teacher training ('professores com habilitação própria')
- 4 - Teachers without a degree and without teacher training in geography ('professores com habilitação suficiente e outras habilitações')

- three schools (B, E and F) had computer facilities for geography teaching, but in 1990/91 another three schools will have these facilities also.

- d) The departmental allowance was very small in all schools (school G had a bigger one, but in fact this school was the least well-equipped for geography teaching).

The role of the head of Department

The influence that the head of the department has over the department varies from school to school.

- a) In small schools with a few geography teachers the HOD exerted a direct influence on all geography teachers (For example school H. In this school the head of department was also the headmaster). In school A the

headmistress (a geography teacher) had probably a bigger influence on the department than the HOD.

- b) In schools with teacher training, the teacher in charge of teacher training and the teachers undergoing teacher training tend to form a separate group (Schools B, C, D and G). Nevertheless in school B the HOD works preferentially with this group; in school C the HOD tries not to lose control over it; in school D it forms a group apart; and in school G it seems that the teacher training group exerts a prime influence in the department (specially concerning the planning of activities).
- c) In schools with day and evening classes it seems difficult for the HOD to have the control of what is going on during both periods of time, because he/she teaches usually only during the day or during the evening; he/she has difficulties to meet teachers who teach during a different period of time than he/she does; the evening classes realities and problems are different from day ones, in these departments there are often too big a number of teachers.
- d) The HOD expressed special concern in helping teachers without academic and training qualifications in geography. The HOD of school E found difficulties in meeting these teachers and helping them.

Planning process

- a) Long-term and medium-term planning are done by groups of teachers.
 - in schools (B, C, D, E and F) teachers are split in groups according to the years they teach and do the planning together concerning the respective year;
 - the HOD of school C showed special concern in attending all these meetings to co-ordinate the planning done by the different groups.
- b) The short-term planning is done individually by each teacher.
 - in schools E and F teachers use the plan sent by the DGEBS and adapt it to students' age and socioeconomic level (school E), to the specific conditions of one class in order to motivate students (school F);
 - in school H the HOD started to use the planning done during teacher training, but he modified it during successive years.
- c) The official syllabuses give relevance to an objectives approach and they

contain a detailed definition of operational objectives in the cognitive domain. It is obvious that this has a big influence on planning at instructional level, but it does not imply that teachers did not give importance to the process of learning (see Graves, 1979, 1980, Chapter two).

- the HOD indicated criteria for defining short term objectives, such as: their relevance for students - in order to understand reality and be useful for their future lives (school A); necessary to their future studies (school B); according to students' interests (school C); according to the class and students' characteristics (school G); in order to motivate students (school H);

- the HOD of schools C and D stated that in planning prime importance was given to the aims of geographical education;

- the head of school B was the only one that stated that she concentrates on procedures and not on objectives.

- d) The HOD of schools A, B, C, D, G and H stated that the sequence order of content prescribed in the official syllabuses was modified.

- students' interests, was the most indicated reason to explain this alteration;

- the HOD of school G said this order was modified due to students suggestions or when the content of previous years had not been completed;

- this alteration was also explained by the convenience of studying one topic instead of an other because the first was necessary for the next school year (school A);

- in schools E and F the content order officially prescribed is usually followed. The HOD of school F explained that teachers without adequate qualifications found it easier to follow the prescribed order, which is the same presented in textbooks. Both HOD from schools E and F stated that when this order was modified this was due to students' interests.

- e) All HOD stated that the Inspector, the school's Directive Council ('Conselho Directivo'), the students' parents had no influence on curriculum planning. The 'school global plan' has also little influence on planning. Only the HOD of school B stated that he tried to link some of the 9th year planning with the 'school global plan'.

- f) The most commonly expressed constraints were the following ones:

- teachers without adequate qualifications (schools A, C, D, E, F, G and H);

- finance was also mentioned as a constraint to buying teaching resources and books, to making photocopies, to doing fieldwork (by all schools);
- another constraint was that of time. Time needed for departmental meetings (schools B, C, E and G) for planning, for teachers working together, for organizing fieldwork, for giving help to teachers without adequate qualifications;
- other constraints expressed by schools include: teachers had too many students, classes and years (schools B, E and G), the big number of students per class (school G); the lack of teaching resources (specially school G); the lack of a geography room (school A); the lack of a room allocated for geography teaching only (school G); the lack of a bigger geography room only for geography teaching (school H); the insufficiency of reprographic facilities (schools B, C, D, E, F and G); and pupils learning problems, due to their cultural background (school A), lack of basic knowledge (schools B, E and G) or low level of ability (schools C and D); and difficulties of transport to school (school G).

Teaching activities

- a) In schools A, E and F geography teachers did usually organize outdoor activities together. In schools B, C and D usually do. Geography teachers from schools A, C, D, G and H organized interdisciplinary study visits. The HOD from schools D, E and H pointed out the difficulties of organizing interdisciplinary teaching activities; due to syllabuses of different disciplines not being articulated (mentioned by the HOD of schools D and H).
- b) The headmistress of school A had a project of working with two other schools.
- c) In school E, a yearly 'week of geography' was organized with several activities; in schools C, D, F and H the geography department collaborated in the school 'cultural week'.
- d) Teachers use different teaching strategies. Project work is more commonly organized in school B (by the HOD and the teacher in charge of teacher training) and by teachers undergoing teacher training (mentioned by the head of school D).
- e) Textbooks have big importance in planning and teaching. The majority of schools prefer to opt for textbooks with proposals of activities for pupils. This

idea was expressed by the HOD of schools A, F and H. In schools C, D, E and G textbooks were chosen with the same characteristics. Textbooks were chosen during departmental meetings.

Assessment and Evaluation

- a) Teachers set two or more assessment tests during each term. In all schools teachers usually elaborate their own tests, but in school B the HOD develops them with the teacher in charge of teacher training and in school D the teacher in charge of teacher training with other teachers. In schools C and D the HOD organizes departmental meetings to define assessment criteria.
- b) There are departmental meetings to evaluate the teaching-learning process and at the end of the school year each teacher indicates if he has completed or not the official syllabuses and in a negative case the reasons for this.

Syllabuses

- a) In relation to the official syllabuses, the main problems concerned the 7th year that contained concepts too abstract for the pupils' age (schools A, B, C, E, F and H) and the time allocated for geography teaching in the 7th and 9th years was insufficient to cover the whole syllabus content.
- b) The HOD from schools B and G pointed out the differences between day and evening classes, and according to the HOD of school G the 12th year day and evening classes should not have the same syllabus because students had different interests and needs.
- c) Teachers from schools A, B, C and D had not received the new syllabuses and they had not discussed them. The HOD from school E went to a meeting held in Lisboa, brought the proposals of the new syllabuses to school and teachers discussed them. School F sent a teacher to the discussion meeting held at school E. The HOD of schools G and H were consultants for the new 10th and 11th years syllabuses.

Conclusions

Some conclusions can be drawn from this study that have big importance for teaching and curriculum development.

1. To improve geography teaching conditions in secondary schools it is necessary to have teachers with adequate academic and training qualifications; to make better provision for in-service training; to give schools more teaching resources; and more financial resources.
2. The new syllabuses should give teachers the possibility of adapting their teaching to local conditions; to students' abilities and interests; to teachers 'expertises'.
3. Important modifications should be made at institutional level, making departmental meetings easier, ameliorating the use of reprographic and computer facilities, facilitating the organization of study visits, fieldwork and of pluridisciplinary works.
4. The head of department should play a more important role as a co-ordinator of the planning, assessment and evaluation processes and in implementing the curriculum. He/she should impel teachers to elaborate teaching materials together, to organize indoor and outdoor activities, to improve assessment and evaluation methods.
5. The aid of a geography adviser could be very important specially in schools with less experienced teachers.
6. Parents should be more concerned with their children's school activities.
7. The system of teacher training needs to be altered in order to give teachers adequate preparation.
8. The success of the new education reform implies an open and generalized discussion at school level of the innovation proposals (including those concerning the curricula) that have not taken place until now.

CHAPTER 8

Curriculum Development Issues Interviews with Curriculum Planners

8.1 Introduction

In the previous Chapter evidence was shown as to how planning was done at the instructional level. In order to complete this work it seemed important to determine how planning has been done at general planning level. To attain this objective it was planned to conduct three interviews with geography teachers who, since 1974, have been in charge of developing geography syllabuses, and one interview with a person who during the same period of time had been in charge or connected with the organization of the curriculum of basic and secondary education.

In the previous Chapter reference was made to the fact that, in Portugal now, a new reform of basic and secondary education is being implemented. One interview was conducted with one of the authors of the 'Proposal for the reorganization of the curriculum plans for Basic and Secondary education' ('Proposta de reorganização dos planos curriculares dos ensinos Básico e Secundário'). Interviews were also conducted with two geography teachers who collaborated in the elaboration of the majority of the present geography syllabuses for secondary education. They also belonged to the first group of geography teachers who had been in charge of developing the new geography syllabuses for basic and secondary education. This group resigned and was replaced by another group of geography teachers who developed the new syllabuses now on trial, or which will be experimented with during the next school years. It was planned to conduct one interview with the chairperson of this group. She left Portugal to work in Macau but she asked one member of her group to send a written response to the questions concerning the syllabus design put by the author of this work.

The interviews were informal, the interviewer had a number of key issues which were raised in a conversational style. In the interview with one of the four persons who were in charge of developing the 'Proposal of reorganization of the curriculum plans of the Basic and Secondary education', the interviewer asked him to talk about the process of curriculum organization and implementation, since the 25th April 1974 revolution, until the present. In the interviews with the two geography teachers, questions concerned their experience of teaching and of curriculum development, and the process of syllabuses development.

The responses of the member of the group who developed the syllabuses that are on trial now concerned the organization and the work of the group, the process of syllabuses elaboration, the guiding principles used and constraints which affect . Although an informal interview style was adopted, it was carefully planned. The interviewer collected information about the process of curriculum organization and implementation and focused questions on important issues related to that process and considered as relevant to this work.

In the interviews a tape-recorder was used. The interviews with the two teachers were undertaken in one of the teachers' home. The other interview was undertaken in the interviewer's office. Once the interviews had taken place, they were written up. In the text that follows, the summary of each interview is set out, as well as the written response sent by the member of the second group of geography teachers in charge of developing the new syllabuses.

None of the statements may necessarily represent the researcher's views but only those of the interviewees. Only in the conclusions does the researcher express her own views on these matters.

8.2 Interviews and written response

Interview 1

The teacher

She has had twenty-four years in teaching. For two years she taught 'History and Geography of Portugal' in the Preparatory Cycle ('Ciclo Preparatório') and during twenty-two years taught Natural and Geographical Sciences ('Ciências Geográfico-Naturais') and Geography in Secondary Education. She has been head of department ('delegada de disciplina') for seven or eight school years and in charge of teacher training for nine years.

She has written, in collaboration with others a social studies textbook for the 5th year of schooling and geography textbooks for the 7th, 8th and 9th years of schooling. She developed written tests to be administered at a national level and produced several documents (texts and others) addressed to geography teachers or pupils.

She has a long experience in the development of geography syllabuses and has collaborated in a project of curriculum development in African countries (former Portuguese colonies).

Curriculum development

The 'Social Sciences' syllabus

The first experiences of curriculum development she had were after the Revolution of 25th April 1974¹, when a commission that included teachers of different subjects was then organized and had the task of eliminating from the basic and secondary education syllabuses all references to fascist and colonial ideology. These alterations were introduced for political reasons.

After, she collaborated with the group in charge of the elaboration of the new social sciences syllabus. The group included people with preparation in different disciplines, geography, history, economics and sociology. The work in 1975 was essentially guided by political principles. There was a consensus that it was necessary to reduce the number of subjects included in the secondary education curriculum ('Unified General Course' 7th, 8th and 9th years) and that the study of society was fundamental for children's education.

The social sciences syllabus included geographical, political, social, economic and environmental aspects and a few historical ones. The syllabus was organized in topics²: among those were included essentially geographical aspects, some gave relevance to the interrelation of Man with Nature, and others to the great problems of the World of today (for example, the demographic boom); among those which included essentially economic aspects, some concerned problems of the World of today for instance 'World of Hunger and World of Abundance'. In the syllabus importance was given both to the interrelation of Man with the Earth and to the analysis of Society of today and of its problems.

At the time, among the geographers of the group there was a strong reaction against regional geography. They already had information, through French and English textbooks, about other approaches to teaching geography. There was a wish to do something different. Geography should not only include factual information about countries, regions... which pupils should learn by heart.

The group was strongly politically motivated and there was a wish to innovate.

According to the interviewee, at this time, the definition of operational objectives was then not yet considered as important³, the most important was still syllabus content. Neither were theories or models of curriculum development taken into account. (At the time the interviewee did not know about curriculum theory. Later on, in 1976/77, the interviewee attended a fortnight's course on evaluation. The course included a systematic presentation of pedagogy by objectives and relevance was given to the Bloom's Taxonomy of Educational Objectives⁴).

The present syllabuses

In relation to the development of the present syllabuses, the interviewee said that the process has not been straightforward. The development of these syllabuses has not been done according to any general reform of education.

In 1975/76 the 'launching' of the 7th year of the Unified General Course was based on ideological and educational principles. This 'launching' was possible due to the political situation of post-revolution times. This situation has changed and since then, no constructive innovation has been introduced into the educational system.

In the following year the social sciences discipline was taken out from the curriculum of the 7th year of schooling and the disciplines of geography and history were reintroduced in the curriculum.

The interviewee could not exactly remember dates, but at the end of a school year, a group of teachers was asked to develop a syllabus for the next school year. They developed a geography syllabus for the 7th year of schooling but nothing was planned for the 8th and 9th years. They did not even know if geography would be included in the curriculum of 8th and 9th years and the Preparatory Cycle (5th and 6th years of schooling) syllabuses were not taken into account.

At this time there was no medium and long term educational planning. Planning was only done for the next year. The group had no limitations imposed on them for syllabus construction: they could choose the structure, objectives, content that they wished.

Interdisciplinarity became difficult. The geography group was rarely able to meet with the group of history teachers in charge of developing the history syllabuses.

The geography group opted to do a syllabus for the 7th year of schooling, which essentially contains physical aspects (see Chapter 5, p. 171). At the time they thought that physical geography was well adapted to pupils' age (twelve years old) and pupils liked it. (It was a motivating aspect of geography). The interviewee said that one of the reasons why she opted for physical geography was that contacts with pupils who had been in experimental classes had shown pupils were interested in physical geography.

The Minister of Education, Veiga Simão, prior to the revolution of 25th April 1974, had started a general reform of the education system (see Chapter 5). According to the reform, experimental classes were organized. They had a different curriculum and different syllabuses from the non-experimental classes. These classes arrived at the 9th year of schooling in 1974/75 (see p. 147). After the revolution, the Minister of Education was dismissed and the reform stopped.

The interviewee had been in charge of pupils coming from experimental classes. These pupils in the two prior years of schooling had 'Human Sciences' and 'Sciences of the Nature'. They had had no geography and history. These experimental syllabuses gave teachers the possibility of choosing different topics and developing them according to pupils' interests. Each pupil had an individual file, which included a description of topics studied by the pupil, pupil reaction to these topics and teachers' opinions. The interviewee observed that much importance had been given to physical geography topics (for instance to the study of volcanoes) and pupils liked such kinds of topics. She pointed out that an enquiry approach was used then. This was one of the main reasons why she opted to do a physical geography syllabus for the 7th year of schooling because twelve year old pupils seemed to be interested in physical geography aspects.

The group sent a questionnaire to ascertain teachers' opinions about the syllabus. They did not disagree with it.

The interviewee also belonged to the group that developed the geography syllabuses for the 8th, 10th 11th and 12th years of schooling. She explained that due the fact that during the post-revolution period the curriculum changed several times, they were told to develop a syllabus for pupils that had a prior specific

curriculum. For example, the 12th year syllabus was developed for pupils that had social sciences in 7th year, and that had not had geography in the 8th and 9th years, and could have had or not the subject in the 10th or 11th years. Many pupils arrived then in the 12th year without having previously learned any geography. Afterwards the curriculum was modified and geography became again compulsory for the 7th, 8th and 9th years of schooling, but the 12th year syllabus was only slightly altered, until the present time. The consequence was that some pupils studied rural, industrial and urban space, three times, in the 9th, in the 10th or 11th years ('area of study' D) and in 12th year. This is very demotivating specially when teachers deal with the different topics in too great a depth in the 9th year.

To develop the syllabuses they were influenced by French and English textbooks and later on by Spanish works, specially those from H. Capel.

The new reform syllabuses

The interviewee was also initially chosen for being chairperson of the group in charge of developing the syllabuses for the present reform of the education system, now being implemented.

She chose the other members of the group: teachers with whom she worked before or teachers who had the reputation of having good scientific and pedagogic training. She also had the task of choosing people of different ages, because these would have had different forms of training in geography (due to the evolution of geography as a science and of its teaching at higher education level).

She was invited to be the chairperson by the members of the group who elaborated the 'Proposal for the reorganization of the curriculum plans of Basic and Secondary Education' ('Proposta de reorganização dos planos curriculares dos ensinos Básico e Secundário'). She accepted the principles expressed in the proposal and the work of her group was based on these principles.

According to this proposal: in the 5th and 6th years of schooling there would be a subject called 'History and Geography of Portugal' (belonging to the pluridisciplinary area of 'Languages and Social Studies'); in the 7th, 8th and 9th years the disciplines of history and geography would be replaced by a pluridisciplinary area called 'Human and Social Sciences'; and in the 10th, 11th and 12th years the study of geography would only be done in the specialist area of 'Economic and

Social Studies'.

In relation to the 1st, 2nd, 3rd and 4th years, the group was asked to ensure that what went into those years was followed up in years 5 and 6.

The interviewee had meetings with the chairperson of the other disciplinary groups and specially with the chairperson of the history group since they would develop integrated syllabuses of history and geography.

Meetings with the chairpersons of the other disciplinary groups had the following purposes: promoting syllabuses articulation and establishing a common syllabus design (what each syllabus should contain: aims, objectives, levels of objectives...).

The first meetings with the history group showed evidence of the difficulties of developing integrated syllabuses for geography and history. The history group wanted to maintain the chronological order of presentation of historical facts and gave geography the limited role of producing the scene which helped in the explanation of historical events. To enter into an agreement with the history group the geography group proposed at the beginning of the 5th year, to include the study of Portuguese territory and at the end of the 6th year, after historical aspects, the study of Portugal of today. In the 7th year in geography the group proposed to include the study of the most important geographical concepts (such as orientation, change, localization); in the 8th year, different topics at European level, and in the 9th year, the great problems of the World of today. This structure would give the possibility of linking historical and geographical approaches and their content.

In the 10th, 11th and 12th years geography and history were separate subjects. The geography group proposed for the 10th year: the study of systematic geography and for the 11th year: the study of geography of Portugal.

On the 6th March 1988 the 'Proposal for the reorganization of the curriculum plans of the Basic and Secondary Education' was discussed at national level in all schools, establishments in charge of teacher training, trade unions and so on. The majority of geography and history teachers were in disagreement with the linkage of geography and history in the 7th, 8th and 9th years. They argued that they had not had adequate preparation to enable them to teach history or geography.

The group who developed the proposal for the reorganization of the curriculum expressed the idea that with in-service training, they would be able in

four years time, to teach both history and geography at this level. Nevertheless the proposal was modified and geography and history reassumed their separate identities in the 7th, 8th and 9th years. History would be taught in all the three years, but geography only in the 7th and 9th years.

The interviewee and her group reacted against the hiatus of the 8th year, they expressed the impossibility of developing syllabuses in accordance with the new reorganization of the curriculum, and resigned.

Interview 2

The teacher

She has had twenty-two years in teaching. For one year she taught 'History and Geography of Portugal' in the Preparatory Cycle ('Ciclo Preparatório') and for twenty-one years taught 'Natural and Geographical Sciences' ('Ciências Geográfico-Naturais') and Geography in secondary education. (She also taught Natural Sciences and Crafts for one school year). She has been head of department for several years and in charge of teacher training for thirteen years.

She wrote in collaboration, a textbook of social sciences, a textbook of geography for the 7th year of Complementary Course (today 11th year of schooling) and textbooks of geography for the present 7th, 8th and 9th years of schooling, but the first book was never published owing to a change in the syllabus for that year. She developed written tests to be administered at national level and several documents (texts and others) addressed to geography teachers or to pupils (including pupils living in foreign countries).

She has long experience in the development of geography syllabuses and collaborates in a project of curriculum development in African countries (former Portuguese colonies).

Curriculum development

She wrote (in collaboration) a textbook for the discipline of social sciences that replaced in 1975, geography and history in the curriculum of the 7th year of schooling. She sent the textbook for approval to the ME but in the meanwhile this

discipline was withdrawn from the curriculum and the place of geography and history in the 7th year curriculum was again re-established. Her book started with the following sentence: 'O equilíbrio ecológico do Planeta tem na industrialização e na concorrência capitalista sérios adversários' ('The ecological equilibrium of the Planet has industrialization and capitalist competition as serious enemies').

In the secondary school where she teaches, the discipline of 'Social Sciences' was then taught by teachers of geography, history and philosophy. Each teacher according to his/her scientific preparation chose topics that he/she could teach more easily. It seemed that geographers, historians and philosophers were teaching three different subjects with three different syllabuses⁵.

According to the interviewee, the syllabus was made relevant to issues due to the political situation at that time. The most important thing in the syllabus was not the attainment of objectives previously defined (and for many teachers still is not, now).

The interviewee said that in the mid seventies she had not yet heard anybody lecture about curriculum development theory. This happened only in the early eighties. She invited a higher education lecturer⁶ to do a seminar for teachers in her school and this was the first time that she heard a structured lecture about curriculum development and pedagogy with objectives.

The present syllabuses

She worked with the teacher of the first interview, in the development of the present syllabuses for the 7th, 8th, 10/11th ('study areas' A and D) and 12th years of schooling. She explained that she agreed to develop a syllabus for the 7th year of schooling of physical geography because she administered questionnaires to her pupils and their responses showed evidence that they liked physical geography. According to her opinion, twelve year old pupils can understand physical aspects more easily than human aspects. In physical aspects she argued that there is almost a direct interrelation cause-effect and in the human aspects there is a multiplicity of factors and interrelation between them. They developed this 7th year syllabus deliberately too long for two teaching periods per week, in order that teachers should protest and oblige the Minister of Education to increase the number of geography teaching period per week.

It was the protests (some organized by the interviewee, in collaboration with other teachers, for example, sending letters signed by a large number of geography teachers to the Minister of Education) that resulted in the re-establishment of geography in the curriculum of the 8th and 9th years of schooling. A UNESCO officer visited Portugal at that time. He was also influential in the re-establishment of geography in the curriculum.

The interviewee explained that in the 7th year syllabus they were concerned to include the study of principles of physical geography; in the 8th year of reviewing the study of these principles and including the principles of human geography, and in the 9th year of studying the principles of human geography in greater depth at world scale. (The 9th year syllabus was developed by another group of teachers, but the outline of the syllabus had been done by the group who developed the 7th and 8th years syllabuses).

For the 10th and 11th years they developed three different syllabus (of physical, human and economic geography, according to different 'areas of study' with the objective of reinforcing the role of geography in the curriculum. (A bigger number of students would choose the subject when the syllabus was adapted to respective 'areas of study' and interests). They developed syllabuses for the 'areas of study' A, C and D. The syllabus for the area C, including essentially problems of economic underdevelopment, was later on withdrawn from the curriculum and replaced by another syllabus.

With respect to the repetition of content in the 9th year, in the 10th or 11th years ('area of study' D) and in 12th year, she explained this by the fact that in the 9th year teachers cover some topics in too great a depth given the pupils' ages, and repeat them in the following years.

The 12th year syllabus was developed for students that, in the majority of cases, had not had geography in previous years. The group was told that the syllabus would be replaced in one, two or three years by a new one, but this did not happen until 1990.

The interviewee was against the fact that, especially during teacher training, some teachers cover different aspects of syllabus content in too great a depth (they give almost higher education lectures). For instance, the group included in the 12th year syllabus the study of history of geography and statistics. The study of history of geography should be covered in five teaching periods. Some teachers cover it

in too much depth. They teach it for almost the whole first term.

Students should apply the statistical knowledge to the study of rural, industrial and urban space. Initially the syllabus was planned to be taught during five teaching periods per week, later on this was reduced to four. Consequently, there is not enough time to study the application of statistics to the study of spatial organization.

One lecturer from the Department of Geography of the University of Lisboa collaborated on the development of the 12th year syllabus.

The new reform syllabuses

Interviewee 1 asked her to collaborate in the group that would develop the new syllabuses. She confirmed the difficulties of developing an integrated syllabus for geography and history. For historians, 'geography was merely a stage of history'. The geography group tried to develop a kind of syllabus that would make possible interdisciplinarity with history. The syllabuses offered the possibility of teachers choosing examples and consequently of adapting teaching to schools. All members of the geography group resigned, due the problem of the 8th year 'hiatus'.

Written response

(This is a summary of the response)

(This response was given by one member of the group that developed the project of basic and secondary education geography syllabuses, which are now on trial in some schools).

1. The group and its work

The group of geography teachers that developed the new syllabuses, included teachers with different abilities, different scientific knowledge, who had the capacity for team work and for innovation.

Initially an evaluation of the situation, constraints and obstacles, was done by the group.

Secondly the group reviewed the literature concerning: learning theories and models, curriculum development, epistemological and methodological trends in geography and teaching technologies. The group also made a comparative study of curriculum development in geography (syllabus development in several countries - France, United Kingdom, Germany (GFR), Spain, Belgium and Canada). Spanish geographers who were in charge of doing the co-ordination of syllabus development at regional level in Spain (from the Universities of Valencia and Sevilla) sent documents and in one case came to Portugal. Their collaboration was particularly important.

Meetings with the groups in charge of developing syllabuses from other disciplines: with those more conceptually linked with geography and others with relevant instrumental roles (such as, Portuguese, mathematics, computer science and philosophy) were held. Unfortunately this work was not regularly undertaken.

The work was based on several documents - 'Comprehensive Law on the Education System', official curriculum design and several official instructions.

Thirdly, the group defined the global structure of the geography curriculum, taking into account the collected documentation. The group opted to give special importance to cognitive processes, namely to conceptual learning.

The global structure was defined in team work; afterwards sub-groups were organized. They were in charge of developing syllabuses concerning different years, but their proposals were always discussed in the main group.

2. Constraints

The Portuguese context restricts the possibility of doing options and of innovating. In Portugal a wide interest in education disciplines is relatively new. Research in education has been insufficient and the results are not known by the majority of teachers. In relation to methodological problems, research has been mainly undertaken in the field of experimental sciences. Consequently teachers have very different degrees of knowledge about research in education. A wide discussion of epistemological and methodological problems would be necessary that would result in a consensus

needed for overall internal and external coherence of the different syllabuses. There are also disciplinary preconceptions that make the development of interdisciplinarity difficult.

Consequently the geography group was compelled to accept a curriculum design which was the origin of serious difficulties in the development of geography syllabuses. Namely these difficulties arose from: a very problematic articulation between geography and history in the 5th and 6th years of schooling; the fact that geography was not included in the curriculum of the 8th year of schooling (but is included in the curricula of the 7th and 9th years); the fact that in the 12th year of schooling geography was linked with economics. It was necessary to do a syllabus including geography and economics. These difficulties were compounded by the opposition of disciplinary interests, connected to job problems.

Another problem concerned poor general organization of the reproduction and distribution of materials and of the insufficiency of resources to implement the reform.

3. Theoretical principles

Different educational ideologies and educational thinkers had influenced Portuguese pedagogy. Among Portuguese thinkers, António Sérgio was very influential. It is also necessary to point out the influence of the conceptions of learning as active. The influence of Freinet was predominant in the pedagogy developed in the School 'Veiga Beirão' (before 1974). After the 25th April 1974, Paulo Freire, Carl Rogers became influential as well as 'institutional pedagogy'. Over time this pedagogy became only practiced by a small number of teachers.

There was a preferential adoption of a pedagogy of objectives, but many teachers still use the 'transmission-reception' approach, where emphasis is placed on memorizing facts and the textbook is the fundamental teaching resource and almost the only one.

In the last twenty years there has been an evolution of the education disciplines in Portugal. The number of master's and doctorates (firstly obtained in foreign countries and now in Portugal) shows evidence of this fact, as well as the growing number of periodicals in which the results of the

research work done in Higher Education Schools ('Escolas Superiores de Educação'), Integrated Centres of Teachers Training ('Centros Integrados de Formação de Professores') and departments of education of the universities are published.

A large number of experiments show the resurgence of an open pedagogy, of an actualization of the democratic proposals of Dewey, involving projects and the adoption of a systemic approach influenced by theories of communication. These approaches are based on more recent developments of a cognitive-constructivist perspective in the field of learning theories.

These are the theoretical principles of the work undertaken by the group.

Some authors or works had a special influence in the choice of aims, objectives, content..., among them E.W. Eisner, Kelly, the works published by UNESCO (1989) 'Les contenus de l'éducation. Perspectives mondiales d'ici à l'an 2000' and UNESCO (1981) 'Finalités de l'éducation' and M.G. Small (1980) 'Through the 80s'.

In relation to geographical thinking in the work developed by the group, the contributions of the analytic phenomenologist, social and systemic perspectives are evident. The influence of H. Capel was also very important: from his epistemological reflections to his methodological ideas.

In the choice of innovatory methodologies the opinions expressed by the Spanish geographers who came to Portugal were important. Books on teaching activities from Canadian, American and British authors were also important for the elaboration of proposals of activities presented by the group. The two Source Books for Geography Teaching, as well as the works of N.J. Graves were also influential.

Interview 3

Interview with a member of the group that developed the 'Proposal for reorganization of the curriculum plans of Basic and Secondary Education'. He is a graduate in English and German languages and literatures, has many years in teaching in secondary education and was Director General for Secondary Education ('Director-Geral do Ensino Secundário') after the 25th April 1974. He was one of the four members of the group that developed the above proposal and is now working in one of the offices in charge of implementing the new reform of basic and secondary education. What follows is a summary of his views.

Curriculum development after the 25th April 1974

After the 25th April 1974 there were several alterations of certain aspects of the curriculum of Basic and Secondary Education, that according to the interviewee cannot be identified with curriculum reorganization. They were, often, only syllabus alterations based on 'perceptions' and not on quantitative data. (For example, some syllabuses were reduced, although there was no data to indicate that they were too long). At that time those who had more influence were more able to impose the acceptance of their pedagogical ideas, over and above their political ideas, which had always been, and still remain important.

In fact in Portugal there were no specific institutions needed for each phase of the curriculum development process (that in spite of being a systemic process it needs specific institutions). For example, there was no specific institution in charge of evaluating the curriculum with the exception of rare cases, syllabus evaluation was never undertaken that is, not just of the syllabuses but also of the syllabus articulation (this is the way different subject syllabuses relate to one another) and of their impact in the system of education at the general level and at school level.

Syllabus evaluation was never done which included three fundamental questions: Who developed the syllabuses? How did syllabuses relate to the principles of a certain reform? How did teachers 'manage' them? This last aspect seems fundamental. Syllabuses are always proposals and to know how teachers

'manage' them is important, specially for teacher training purposes.

Until recently there were no basic principles to orientate a reform (now there is the 'Basic Law on the Education System'). People who developed syllabuses, developed them in accordance with educational orientations, that were not related to one another, even in fundamental aspects, this was due to the many changes in Ministers and consequently of political orientation after 25th April 1974. These constant changes after 1974 contrasted with the stagnation of the period 1948-1968 when the structure of the curriculum hardly changed.

Today there are specific institutions, among them the Institute for Educational Innovation ('Instituto de Inovação Educacional'), which should have and should give the country, the needed instruments to evaluate internally and externally, the efficacy of the educational system. The importance of external evaluation will increase owing to the fact that schools give to students a preparation needed for active life, the importance of schools' accountability will increase. Schools should meet requirements of quality.

The Institute for Educational Innovation should help teachers to become curriculum developers in relation to their teaching practice: syllabus 'management', their adaptation to a class, to a locality, and to the economic, social, political and environmental conditions as well as to the requirement of consumers. (This should be connected with a reformulation of the teacher training process). This Institute should acquire the resources, methods and techniques to evaluate the new curriculum. But it is fundamental that it give to schools, to teachers, the possibility of doing an evaluation of their own teaching practice.

The evaluation process should start from the local level and move to the intermediate level. The Regional Directorates will have an important role; they will send the Institute for Educational Innovation information about how the curriculum is being implemented, how syllabuses are being analysed what the parents reactions are and so on, that is, if there is a logical correspondence between the aims of the reform (which are in general terms defined in the 'Comprehensive Law on the Education System') and the process of implementation.

A first revision of the new syllabuses will be followed by a second one that will take place in seven or eight years' time. It will not be possible, at the time of the second syllabus revision, for all schools to have this role because Portugal is still developing education qualitatively besides improving its quality. In Portugal there

are still many children who do not complete the compulsory schooling of six years, there are only 40% at secondary level and 11% at higher education level.

The Institute for Educational Innovation should also describe (and this was never done in Portugal) what was done experimentally in schools; educational projects that had been developed in certain schools and are only known by a small number of people. Teachers should be prepared to study these projects and should be able to develop their own models of research.

The school must be a favoured place of teacher preparation. Teachers have their own perspectives of life, of society, they know their pupils. Each teacher 'manages' the syllabuses in a different way. Teachers should be agents of curriculum development.

Syllabuses are elaborated at national level but they can include a part of content connected with regional reality. (The law gives this possibility). If schools had pedagogical autonomy they could give greater importance to the regional component. In the report concerning the 'Proposal for the reorganization of the curriculum plans of the Basic and Secondary education', it was mentioned that the 'educational territory' can include one, two or three counties ('concelhos') or can be larger. Schools located inside the area of an 'educational territory' can have projects in common. (For example, should schools located in the border area with Spain could have a different type of curriculum implementation and curriculum autonomy).

In the present reform, the 'área-escola' was created, for use by schools according to local needs and opportunities. It gives schools the possibility of presenting their own projects. (This is a curricular area, an interdisciplinary area). If teachers are prepared and the central institutions furnish teachers with 'instruments' and support; this could be a very important curriculum area.

Another aspect connected with the use of new technology in schools, is that of the new role of teachers. Some of them are afraid to use audio-visual media in schools, because they think that media will replace the teacher. In fact nothing can replace the human richness, but teachers should be capable and have the possibility of using for example, a good video.

At the time of the second curriculum revision (in seven or eight years time) the central institutions will only define the syllabuses' general structure and basic

content to have a partial uniformity at a national level. Schools will introduce regional and projects components. This is easier in certain disciplines such as Portuguese, geography, arts, crafts and technologies and not so evident for example, in mathematics and physics.

Teachers should be trained to teach the curriculum in the manner indicated. According to the 'Comprehensive Law on the Education System' in-service training is a teachers' right and duty. (Unfortunately in the present teachers' statute 'Estatuto da Carreira Docente' this aspect was not developed, as well as the teachers' roles).

The main teachers' role is obviously teaching, but due to the different school needs at a certain moment he/she could opt to do educational research and for this purpose to have the support of higher education specialists. The problem of school failure could then be partially solved by people who would undertake research work in schools where they know the pupils. This research is also fundamental for the second revision of the curriculum.

Other teachers could be interested not in research, but in teacher training, others in school administration (school organization; timetable organization; organization of curriculum and extra-curricular activities, implementation of links with the local community, and so on).

It would be possible to indicate three or four other different roles for teachers. These 'sub-professions' would include teaching activity and others of the above activities, that would be predominant. The preparation and progress in each of these 'sub-professions' would imply training, which would be given by the schools in charge of doing teacher training, (not only by the 'Escolas Superiores de Educação').

The present organization of in-service training should be modified (for example in the last years, in-service courses about 'inter-action in the classroom' were organized. Four thousand people attended these courses, but it is almost sure, that among them, three thousand and eight hundred people would need or would like to attend other kinds of courses). In Portugal, resources are scarce and the organization of in-service training should be based on the evaluation of teachers' real needs. In-service training could be organized in modules, and the teacher who attended a module in one year would attend other modules in the following years, for example to progress in one of the above 'sub-professions'.

Nevertheless a teacher who received training in one of these 'sub-professions' would not be obliged to progress in it, if he/she would like to change for another. (There should be in-service training, a core curriculum and specialized modules, to facilitate a possible change of 'sub-professions'). Consequently it is necessary to give to teachers an adequate initial education and training and an adequate in-service training (including curriculum development).

Teachers should be able to do an analysis of day to day school life and become agents of curriculum development. The Institute for Educational Innovation should give teachers the needed 'instruments' for doing the above analysis. It is also necessary to give schools 'pedagogical autonomy' (that is the possibility of developing their own curricula, though subordinate to the national basic structure and content; their own evaluation methods; their own projects of research-action).

The first revision of the curriculum now on trial will be slightly impressionist, the second revision must be prepared in advance. The Institute for Educational Innovation in collaboration with the DREs and the DGEBS are in charge of doing curriculum evaluation.

The importance of economic planning, of cost analysis will increase progressively. The ME and schools should be prepared for this. Until now this has not been the case, people working in education are not concerned with finance.

The implementation of the reform at central level is done by three offices: the DGEBS; the Inspectorate General for Education ('Inspeção-Geral de Ensino') and the Institute for Educational Innovation. The work of the DGEBS is based on the four DREs. In the area of each DRE there are experimental schools.

There is another institution, the GEP whose main functions should be to do a prospective analysis of the possible evolution of the educational system and to give technical support to the ME, in order to take decisions. It should be an institution with specialists in several fields, in charge (by contract) of analysing a certain situation, a certain problem, a certain project and of indicating the different alternatives, the different solutions, their costs, the needed resources (human and material).

Some aspects of the curriculum

To the interviewee, nothing can justify, in schools located in cities, the fact that geography teachers give more importance to the study of urban space. In Portugal, agriculture is important and according to the 'Comprehensive Law on the Education System' a future citizen has the right to knowledge of rural space.

Today, according to the 'Comprehensive Law on the Education System' the study of the economic, social, political, environmental and consumer aspects of Portuguese realities, is essential to future citizens. Although there are big differences of content and methodology between 'traditional' disciplines and environmental education, health and consumer education, progressively there will be smaller differences between the importance given to Portuguese, mathematics, geography... and that given to the above types of education. Progressively there will be disciplines and disciplinary areas, contents that will intersect reciprocally, and this is irreversible.

Geography makes a contribution to citizenship, but there is a problem connected with the subject that the responses given to two questions addressed to geography teachers could make evident. These questions are: What does the geography teacher teach? What would he like to teach?

There were significant qualitative changes in geography teaching, in the relationships of the teacher with pupils, in the use of a child-centered approach and in methodological aspects and there were also changes in the perspective that geography teachers have of their subject. (On the contrary, in other subjects there were no such changes). Nevertheless since the seventies this alteration of the perspective of the subject has had the consequence that some geography teachers would like the subject to acquire a very broad function, studying a large variety of phenomena in preference to others that are essential to basic education pupils 'such as, for example, the physical geography aspects'. Some geography teachers say that the study of physical aspects of geography could be included in the content of other disciplines and instead geography would deal with problems concerning town and regional planning, development issues and help students to understand their environment, that will be essential to future citizens in order to ameliorate it.

Geography can play an important role in the above aspects, essential for future citizens, but geography teachers cannot forget that there is an objective content of the discipline and that the new perspective that geography teachers

have, should not imply that they do not teach some aspects that are essential to basic education: the location of big rivers, of Oceans, of important countries... If the pupils do not acquire in basic education such knowledge they will not be able to understand today's world events. It is not useful to know by heart the definition of what a peninsula is, an isthmus, a cape (as in old times) but a child should know that there are different land forms, what they are and that they have an influence on human economic life. It is necessary to give basic knowledge to pupils and later on they will develop by themselves.

Some geography teachers play an important role in developing pupils' enquiring capacities, and they bring to school, resources and materials from outside the school (the same is done by good history teachers). It is necessary to abolish the kind of teaching essentially based on the textbook, that is, of learning textbook content (although textbooks still continue to be important teaching resources).

Many geography teachers use projects in their classes, they can have a role in the diffusion of this method among teachers of other disciplines. It will be fundamental for pupils to develop, evaluate, analyse projects (that could last for two days or for one year or even two). Teachers should almost assume the role of members of the group in project work. In geography, physical education, arts and technology, teachers assume this position but not in other subjects.

Teachers should understand that the teacher's role is not only to transmit knowledge. Pupils receive influence and information outside school and teachers should make it possible for students to use this information.

There is such a rapid evolution of knowledge, that it is necessary to do a synthesis of fundamental knowledge, in order to give children the possibility of transferring it to new situations. It is also important not only to acquire cognitive knowledge but to develop attitudes and values too.

To attain educational success, environmental, health and consumer education are fundamental. According to some people these educational aspects could be included in the content of different disciplines, but in a few years time (at the time of the second revision of the curriculum, it will be possible to have a completely different curriculum organization and these educational aspects will find a place in the curriculum).

Geography and history teachers refused to have integrated syllabuses of both disciplines because they argued, they had no scientific knowledge to teach the second subject. It would be convenient that at the time of this second revision, the group proposal for an integrated area of history, geography, sociology, economy, became a reality. The opposition of teachers is mainly due to mental attitudes that should be altered. Teachers are specialists in one discipline and they like to teach it and not others, but they should be able to make an effort to adapt themselves to situations where their discipline is integrated with another. Many teachers who were against this integration, in fact opposed it to defend their discipline.

In relation to the new syllabuses, in many cases teachers did agree with them but said that more teaching periods per week should be allocated to their discipline. With adequate training, specially in curriculum development, teachers should change their attitudes and participate in a conscious and active way in curriculum reorganization and not give priority to the defence of their disciplines.

At basic education level the World should be presented to pupils in a global way and knowledge should not be split among many disciplines. The 10th year is a transition year and specialization will be mainly done in the 11th and 12th years of schooling.

This ends the representation of the views of curriculum planners and of the former Director General for Secondary Education.

Conclusions

The three interviews and the written response show evidence of the process of curriculum development at general planning level in Portugal, since the revolution of 25th April 1974, until the present reform of the education system.

The main issues concerning curriculum development in Basic and Secondary education in general, and in geography in particular, are also evident.

The curriculum development process after the 25th April 1974

The period following the revolution of 1974, was a period of great political and governmental instability which caused frequent changes in the ME and

consequently of educational ideologies and principles on which the process of curriculum development was based.

Initially there was a general plan of reorganization of Basic and Secondary education in which the more significant aspects were the definition of new aims for the education of young people and the unification of secondary education. This reorganization implied, obviously, a new organization of the curriculum. At secondary education level, the curriculum was unified. The reorganization of the 7th year curriculum was done in 1975. Among the modifications then introduced, one was the replacement of history and geography by social sciences (which included the study of geographical, economic, sociological, environmental and a few historical aspects).

It was defined as a pluridisciplinary subject, that would start with the 'analysis of the present social reality'. The subject was called 'Introduction to the Social Sciences' and in the following school years, pupils would study aspects in the field of the Social Sciences in more depth. Due to political changes (see Chapter 5) the curriculum of the 7th year of schooling was again modified and the study of social sciences was replaced by history and geography.

The subsequent alterations of the curriculum and of the syllabuses of several years of schooling, were done year by year, and in accordance with different principles. (It seemed that there was no medium and long term planning). Interviewees 1 and 2 show evidence of this fact as well as that syllabuses were developed for students with certain previous experiences, syllabuses that would be altered in two, three years. Nevertheless, though students previous experiences became different due to curriculum changes, syllabuses were only slightly altered. As a result, the way different geography syllabuses from different school year, relate to one another became inappropriate.

Only at the end of the seventies and at the beginning of the eighties were the principles of pedagogy by objectives and of curriculum theory diffused among geography planners.

Prior to 1974 there were regional geography syllabuses, after that there was a reaction against this kind of syllabus. Nevertheless the syllabuses then developed were still based on the learning of factual information.

Later on, due to the diffusion of the pedagogy by objectives, they included

a definition of general objectives and lists of operational objectives (essentially of the cognitive domain).

Environmental, development and social issues progressively acquire importance in the geography curriculum.

The influence of 'new' geography is only evident in the syllabuses developed at the beginning of the eighties.

Constraints

At the beginning of this period the main constraint for curriculum development was, very probably, governmental instability. Later on the lack of a basic law of education, giving the basic principles for a new reform (a law that was only approved in 1986) had as a consequence that the curriculum and the syllabuses were not altered in depth for many years.

The lack or insufficiency of adequate preparation in educational and curriculum theory of the majority of curriculum planners was also a constraint for curriculum development.

There was also an absence of needed institutions for an effective process of curriculum development, particularly for evaluating the curriculum.

The curriculum development process today

Constraints

Now some of the constraints mentioned above do not exist, but others still continue. The 'Comprehensive Law on the Education System' has already been approved, there are central institutions for all phases of curriculum development, Regional Directorates were reorganized and acquired importance. Nevertheless, according to the written response, curriculum planners still have very different degrees of knowledge about educational and curriculum theory. Due to this fact it is difficult to reach a consensus necessary for effective curriculum development.

According to the third interview an effective process of curriculum development

should be school based and this implies giving teachers adequate preparation in curriculum development theory, educational research, school administration, and so on. Consequently it is necessary to reorganize in-service training. There are insufficient resources (human and material) at all levels: central, intermediate and local.

In Portuguese education it is still necessary to do a quantitative effort, besides a qualitative one, to ameliorate the system (a high percentage of children still do not complete the compulsory schooling of six years) ⁷.

The new curriculum

In the proposal for the reorganization of the curriculum plans of Basic and Secondary education, at basic education level (which according to the new curriculum reorganization, includes the first nine years of schooling), geography teaching should be linked with history. This caused protests from both history and geography teachers. In fact, young geography teachers have no scientific and methodological preparation in history and similarly history teachers have no competence in geography. Both geography and history teachers have no methodological preparation in interdisciplinarity. It would be necessary to reorganize initial education and training as well as in-service training to implement the integration of the two disciplines.

This aspect of the proposal was modified and according to the approved curriculum plans for Basic and Secondary Education in the 7th and 9th years of schooling, geography continues separated from history, but geography is not included in the curriculum of the 8th year of schooling. This is a serious obstacle for curriculum development in geography.

Geography had and will still have an important role in environmental education, development education, peace studies... This does not imply that importance should not be given to some aspects traditionally included in the geography syllabuses content, such as, the location of facts and phenomena on the Earth's surface. Is not geography the science that studies location, distribution and interrelation of phenomena on the Earth's surface?

It seems that there is now a shift to a conceptual basis for geographical study.

The study of environmental issues, development issues at different scales are included in geography syllabuses; importance is given to cognitive aspects as well as to the development of attitudes and values; in geography teachers are using new methods and new techniques.

These are positive aspects for curriculum development in geography, but the new structure of the Basic and Secondary education curricula is a serious obstacle to implement geographical education at these schooling levels.

In geographical education British, French, Canadian, American... authors were influential. In the eighties the Spanish influence also became important.

CHAPTER 9

Conclusions of the Study and Perspectives

This study has shown how geographical education in Portugal has evolved over the past 150 years or so, and the stages through which it has passed. From being essentially dominated by the Areal Differentiation or Regional Paradigm and much influenced by the French School of Geography, it is now in a much more open phase in which it has submitted to influences from a greater variety of sources: Swedish, American, British, Spanish as well as French.

Thus, development in geography has been paralleled by developments in education themselves stemming from political, economic and social changes. Thus from a system of education whose aim was limited to the production of an elite, it has gradually enlarged itself and become democratized. This has had an impact on the process of curriculum planning in general and geography in particular. Today, the planning of the geography curriculum needs to be done more systematically in the light of developments both in geography and curriculum theory.

9.1 Curriculum planning at the general level

i) Aims of geographical education

It has been pointed out that aims of geographical education should be defined in accordance with the aims of schooling and education that in Portugal are stated in the 'Comprehensive Law on the Education System'. It has also been argued that the choice of geographical education aims should be preceded by a selection of a paradigm or paradigms of geography because geographical education aims must be derived from the paradigm or paradigms selected.

According to geography teachers responses to the questionnaires the main purposes of learning geography are the understanding of the world of today at different scales (global, national, regional, local) and of contemporary world problems, the development of environmental awareness, the development of mental capacities, namely the capacity of observation, the understanding of spatial organization and the development of spatial skills.

Students' opinions about the relevance of studying geography are in

accordance with the purposes indicated by their teachers: geography is important to understand the world and its problems (9th and 12th years students); geographical knowledge helps to understand the environment and to participate in the preservation of the environment (12th years students); geographical knowledge is useful in day to day life (9th and 12th years students). Both teachers and students stated that geographical knowledge belongs to 'general culture'.

ii) Paradigms in geography

According to Johnston (1985) in the last thirty years there has been a bias both in secondary school syllabuses as well as the tertiary level, towards the general and away from the unique, leading to a diminishing awareness of the variability that makes up the "real world". So there is a need to focus more geographical work on the variety of unique situations that comprises the subject matter. It is not to return to "traditional" regional geography but to focus on the unique, to portray the regional variability as local responses to general conditions, responses that create local environments within which future responses are set.

Geography must pay attention to the world as a whole not as a series of examples of general models but as a mosaic of different places, inextricably inter-linked but clearly individual.

The goal of geography is to inform population, an informed population will be better able to make decisions about their lives and livelihoods and world understanding is fundamental to world peace and ultimately to world survival.

Johnston (1985) draws out that in a British context, geography has changed from an idiographic phase to a nomothetic phase and that is necessary now, to portray the regional variability as local responses to general conditions, which does not imply a return to "traditional" regional geography.

In Portugal, at research level, the possibilist paradigm dominated from the beginning of the century up to the 60's. Since then other paradigms have been influential in geographical research, namely the positivist and neopositivist paradigm, due to the influence of British, American and Scandinavian authors. The marxist (radical) paradigm had a wide diffusion both in teaching and research, but much work undertaken within this paradigm utilized and internalized some of the tools and

techniques of the positivist and neopositivist approach (Gaspar, 1985, p. 319-320).

At research level, since the 70's, 'a progressive separation of physical and human geography has broadened the scope of both' (Gaspar 1985, p. 322). Since the 80's Portuguese geographers have tried to study local realities and integrate them into larger scale realities. Are British and Portuguese geographers trying to 'reconcile' the two previously dominant paradigms: the possibilist and the positivist? Are geographers searching for a new paradigm to regulate geographical research?

In Portugal, at school level, since the mid 70's, there has been a rupture with the regional paradigm and the influence of the positivist and neopositivist paradigm is evident in some existing secondary education syllabuses (10th and 11th years - area of study C, 12th year). Nevertheless the organization of other syllabuses (7th, 8th, 9th and 10th/11th years - area of study D) is based on the study of systematic topics and not on a chosen paradigm. The new syllabuses, on trial now, have a concept-based organization.

It has already been pointed out that it seemed appropriate to use as a structure for geography curricula at basic education level (grades 7 to 9) the ecosystem paradigm and at secondary education level (grades 10 to 12) to use more than one paradigm (including the ecosystem paradigm) (see p. 62).

iii) Selection of content and structure of content

For the selection of content and to structure content in a school course it is necessary to consider the total school curriculum structure.

Questionnaires show evidence of some of the problems concerning the existing geography curriculum. In regard to the existing geography curriculum for the Unified General Course (7th, 8th and 9th years of schooling) geography teachers made several criticisms, among them: syllabuses have too much content; the content is not adapted to pupils' age and pupils' realities; there is an absence of adequate co-ordination between: first, the curricula of other subjects studied at the same stage; second, the geography syllabuses prescribed for the successive sectors of schooling (Preparatory Cycle, Unified General Course, Complementary Course and 12th year), third, the topics; fourth, the content and the objectives; syllabuses out of date; small importance given to the study of the local area or the

region. To reduce syllabuses content was also suggested by 9th year pupils.

Concerning the Complementary Course (10th and 11 years of schooling) and the 12th year of schooling, geography teachers criticized mainly syllabuses content (too much), and the lack of co-ordination between the Unified General Course syllabuses and the Complementary Course and 12th year syllabuses. To reduce syllabus content was the most frequent suggestion made by 12th year students.

Interviews with curriculum planners also showed evidence of the difficulties they found in co-ordinating the geography curricula with the curricula of other subjects, because curriculum planners are essentially preoccupied with their own specializations. In relation to the new syllabuses this was specially evident in relation to history. Curriculum planners found many difficulties in producing interdisciplinary syllabuses for the 5th and 6th years of schooling. For the 7th, 8th and 9th years of schooling the reformers' idea was of linking the study of geography with that of history. This became impossible due to the reaction against the integration of the two subjects, both from geography and history teachers, arguing that they had not an adequate scientific and training qualifications for teaching the two subjects; difficulties arose too from the fact that curriculum planners are essentially preoccupied with their own specializations.

The solution found is not appropriate for geography teaching because according to the new 'curriculum plan' (Decree-Law n° 286/89 of 29th August 1989) the study of geography is prescribed for the 7th and 9th years of schooling and not for the 8th year. This fact gives rise to very serious problems for curriculum organization (which did not exist before).

Problems of co-ordination between subjects and criticisms made by teachers in relation to syllabuses seem to suggest the need for an effective collaboration in curricula organization of curriculum planning experts.

The new 'curriculum plan' for basic and secondary education prescribes for the first four years of schooling the 'Study of the Environment' ('Estudo do Meio'). It is important that some concepts and skills of geography be included in this study. This implies appropriate teacher training.

As was pointed out above, the new 'curriculum plan' prescribes for the 5th and 6th years of schooling, the integration of geography with history in the study of

the 'History and Geography of Portugal'. In this case it seems appropriate to the author of this work to adopt a structure of content based on the study of a series of themes about Portugal, such as: the territory; population and settlement; social, political and administrative organization; economic activities; the relationship of Portugal with other European countries; the relationship of Portugal with other civilizations; Portugal of today. This structure would permit a study of historical and spatial aspects of Portugal and seems more appropriate than a chronological presentation of 'sub-themes', which was the adopted one.

New geography syllabuses on trial now, prescribe for the 7th year the study of Europe and for the 9th year, the study of human and environmental geography at worldscale. Instead of suppressing the study of geography in the 8th year it would be important to study Portugal in more depth in that year than in the 5th and 6th years of schooling, because the 3rd cycle of basic education (which includes the 7th, 8th and 9th years of schooling) is the terminal cycle of compulsory education and obviously the study of the geography of Portugal in the 5th and 6th years of schooling (age 10-12) is done at a very elementary level. It would be possible to structure an interdisciplinary syllabus based again on the study of themes. The problems of Portugal of today could be studied at national, regional and local levels. To explain these problems and for pupils be aware of them, the contribution of geography, history and even other social sciences would be essential.

Concerning the 10th, 11th and 12th years of schooling, students' questionnaires showed evidence that 12th year students from different courses (which correspond to different specialist areas of study) have not the same level of interest in different aspects of geography. The results seem to justify the need for producing different syllabuses for different students' 'specialist areas' or syllabuses which give the possibility for students to choose among several themes.

According to the new 'curriculum plan' in the 12th year the study of geography will be integrated with the study of other social sciences, namely economics. The new subject is called 'Introduction to Economic and Social Development' ('Introdução ao Desenvolvimento Económico e Social'). Geography teachers are specialists in their discipline, it is obvious that the integration of the study of geography with other human and social sciences demands in-service training and a reorganization of initial training.

For the selection of content, and to structure content in a school course, it

is also necessary to consider sociological and psychological variables. In order to offer a scientific basis for curriculum planning, research into the relationships of achievement in geography and sociological and psychological variables, in the Portuguese context must be undertaken.

'Situational' variables, such as the location of school, school architecture, availability of teaching resources and staff must also be considered in the selection and structuring of the content. Questionnaires' responses showed evidence that staff qualifications, teaching methods, the availability of teaching resources were very different from region to region, and from school to school. This work concerned only state secondary schools, but geography is also taught in preparatory schools, that besides the preparatory years (5th and 6th years of schooling) there are also one or more Unified General Course years (7th, 8th)...('Escolas C+S') and private schools. Consequently there is a great variability of situations.

In order to plan a national curriculum, first, there is an evident need to analyse the school system. It is necessary to ascertain the need for change and the direction that curriculum change should take. The effects on curriculum change, of constraints associated with deficiency of qualified staff, equipment, teaching resources and finance to provide improved teaching resources and funds for research, as well as institutional difficulties created by curriculum change, must also be analysed; second, this analysis should be taken into account when selecting the aims of the curriculum, general objectives and in suggesting procedures.

Very often opinions of those directly involved in the educational system at school level are not taken into account, schools' real situations are overestimated (or unknown), and the difficulties created for schools by curriculum change underestimated.

In the Portuguese context due to the great variability of schools' 'situations' it seems necessary to design a national curriculum with a structure that will permit easy adaptation to different school 'situations'.

9.2 Curriculum development at school level

It was pointed out that Skilbeck (1982, 1984) developed a model for school-based curriculum development called 'situational' (see p. 32). The model has five distinct stages: stage 1, 'Analyse the situation'; stage 2, 'Define objectives'; stage 3, 'Design the teaching-learning programme'; stage 4, 'Interpret and implement the programme'; stage 5, 'Assess and evaluate'.

In the Portuguese context, the five stages should concern:

Stage 1 - 'Analyse the situation'

At school level, the following aspects should be reviewed:

- a) perceived and felt problems (by teachers, students, parents...) and shortcomings in the existing curriculum;
- b) students' aptitudes, abilities, interests, defined educational needs, attitudes and values;
- c) teachers' values, attitudes, skills, knowledge experience, interests, special strengths and weakness, roles;
- d) school ethos and political structure: common assumptions and expectations, authority relationships, relationships of teachers with other teachers (of the same department and of other departments), relationships of teachers with heads of department, relationships of teachers with students, relationships of teachers with parents, methods of achieving conformity to norms and dealing with deviance;
- e) facilities for teachers' meetings: time, time-tabling and accommodations;
- f) material resources including plant, accommodations (specially equipped rooms), teaching resources and finance to undertake fieldwork and for enhancing material resources;
- g) local resources (for fieldwork and project work);
- h) characteristics of local community and links of the school with the local community;

- i) potential external support e.g. in-service training, organization of resources centres, funding for research from DGEBS, DREs, 'Institute for Educational Innovation', higher education institutions, trade unions, professional associations, resources centres, CALs,...;
- j) potential external support for remedial teaching.

The other four stages should take into account the findings of the analysis of the situation.

Stage 2 - 'Define objectives'

As Skilbeck points out (op. cit., p. 235):

- 1) Objectives in a curriculum should be stated as desirable for student learning, and as actions to be undertaken by teachers and they need to be clear, concise and capable of being understood by the learners themselves;
- 2) Objectives are directional and dynamic in that they must be reviewed, modified and if necessary reformulated progressively, as the teaching-learning process unfolds;
- 3) Objectives gain their legitimacy by being related systematically both to general aims and to the practicalities of teaching and learning, and by the manner of their construction and adoption in school;
- 4) There are several types of objectives: general-specific; long and short term; higher order cognitive-lower order informational; subject-specific-global; and so on. Working groups need to select and plot types of objectives;
- 5) The construction of curriculum objectives has to be participatory involving students as well as teachers, parents and community as well as professionals.

In the Portuguese context, at school level, teachers must define objectives relating them systematically to general aims defined at national level, but the definition done at school level should take in account the real school 'situation', which is very different from school to school, due to differences in staff qualifications and expertise, students' characteristics, availability of accommodation, resources and organization, and the characteristics of the region and local where the school is.

Individual teachers should also define short term objectives taking into account their own and students' specific characteristics which vary from class to class.

Stage 3 - 'Design the teaching-learning programme'

Decisions must be taken at school level about:

- 1) the relationship of learning in the different subject areas to the overall objectives of the curriculum;
- 2) the organization of interdisciplinary teaching;
- 3) the collaboration of subjects in interdisciplinary areas (e.g. 'school-area');
- 4) the grouping of students;
- 5) the scope, sequence and structure of teaching content;
- 6) space, resources, materials, equipments;
- 7) the proposed methods of teaching and learning;
- 8) staffing needs and allocations;
- 9) timetabling and scheduling.

Stage 4 - 'Interpret and implement the programme'

The author of this work agrees with Skilbeck (1984) that although there is a need for producing a good plan or design at school level, the plan is not a guarantee for satisfactory teaching and learning. The underlying structures of rationality, foresight and preparatory organization must be combined with teacher professionalism and supported by regular monitoring, review and evaluation.

Curriculum ought to be planned and designed in detail by those in the school. Teachers have a knowledge of the students for whom the curriculum is planned, to ensure a good match with their characteristics and needs. The fact of the curriculum being designed in major part, by those responsible for teaching, ensures their commitment and practical engagement, and a good match with their capabilities.

The researcher also agrees that 'interpretation and implementation by

teachers of a curriculum in whose design they have prominently figured ought to be better than other styles of curriculum development, even if the role of the school is primarily adaptive with respect to an externally produced plan and design, and if the curriculum materials are very largely of external origins.' (This is the case of curriculum planning at school level in Portugal).

Stage 5 - 'Assess and evaluate'

The distinction has already been made between assessment and evaluation as well as reference to the different kinds. Evaluation of the curriculum must take into account student assessment.

At school level it is necessary to experiment and develop instruments and procedures of assessment and evaluation. Due to the fact that in the Portuguese school system student assessment is essentially done by their teachers and not based on external examination results, this implies a teachers' expertise in assessment and the need of teachers to collaborate in the definition of a common criteria of assessment, which often does not happen. Curriculum evaluation is only occasional or periodic and partial and done at departmental level.

The 'assessment component must not be limited to class learning and performance in departmental schemes of work but must reach out to encompass that wide spectrum of learning that a good school facilitates for all its members. It follows that the evaluation of the curriculum entails judgements on the whole life of the school and the quality of experience it provides' (Skilbeck, op. cit., p. 239).

New syllabuses are on trial now, but in relation to assessment only a few recommendations were given. A new model of assessment was proposed by the ME, which was under debate, to seek views and advice. Much criticism was made of the proposed model. Teachers involved in the experiments of new syllabuses found serious difficulties in student assessment and consequently in the evaluation of the new curriculum.

Interviews with heads of geography departments showed evidence of difficulties for curriculum development, not only due to the insufficiency of accommodation, equipment, resources, staff with adequate academic and training qualifications, but also due to the difficulties of teachers meeting together even teachers belonging to the same department; difficulties lying in the lack of time,

time-tabling organization, insufficiency of accommodation or even in the fact that teachers did not like to work together.

Effective school-based curriculum development implies a high level of school organization and organization skill, the existence of necessary resources and support structures and a developed capacity in teachers to use the structures that are available to them, good expertise from teachers in curriculum development processes as well as motivation to innovate. School-based curriculum development implies giving adequate preparation to teachers at an initial training level to develop curriculum expertise (preparation in: curriculum design, team-teaching, classroom-interaction studies, interdisciplinary teaching, assessment and evaluation, and so on); but also requires in-service training. This should include theory and practice of curriculum development.

Motivation for teachers to acquire expertise in curriculum development could be done through linking expertise to career advancement. Schools' accountability very probably will increase and this may provide an incentive to develop the curriculum.

Nevertheless, many of these conditions will depend largely on the availability of finance, for releasing teachers for planning; for organizing service courses and systems of support; for generating greater motivation of career advancement.

9.3 Curriculum implementation

In a centralized system, like the Portuguese one, with a national curriculum organized at central level, curriculum implementation has great importance.

It has already been pointed out that curriculum organization done at central level often does not take into account the real school 'situation' and overestimates their potentialities to innovate. Deficiency of accommodation, equipment, resources, qualified staff and an inadequate dissemination of the proposals for innovating, leads frequently to a loss of efficiency in the process of curriculum development.

In a Portuguese context it seems necessary to develop regional structures that will give support to schools, e.g. organizing in-service training and resources centres, giving aid in administrative and pedagogical management and in innovation

initiatives, namely concerning curriculum innovation.

Team planning consisting of school teachers, higher education specialists in one discipline and in curriculum studies, regional advisers and any others are seen as very important in curriculum development too.

9.4 Curriculum evaluation

Interviews with curriculum planners showed that until now a systematic evaluation of the school curriculum has never been done in Portugal. Nevertheless recently the Institute for Educational Innovation was created which has the aim of evaluating the curriculum.

The researcher believes that a correct evaluation of the curriculum undertaken by central institutions implies among other aspects, a correct evaluation done at school level. In order that teachers play a role in curriculum development they need to familiarize themselves with a number of evaluation techniques, this implies again, giving importance to initial training for evaluation and an in-service training programme.

9.5 Teacher training

Questionnaires addressed to teachers and other data showed evidence that one main problem of geographical education in schools is the existence of large percentages of teachers-in-post without teacher training or even without an academic degree in geography. Nevertheless the new models of teacher education based on Universities will solve this problem in some years time.

These models of teacher education present certain problems, namely the inadequacy of scientific preparation given to satisfy all the needs of future teachers, specially taking into account the integration of geography with history and economics established in the new curricula.

Reference was also made to the problems of ensuring adequate links among all institutions and teachers involved in the process of teacher education.

Supervisors at school level, teachers in charge of methodology of geography

and teacher training co-ordination, do not have an adequate preparation for playing their roles, specially because there is not yet any post-graduate course in geographical education in Portugal. University teachers in charge of giving scientific preparation to future teachers, should also have some training in pedagogic aspects. The model of training for teachers already in-post, has been severely criticized and very probably will soon be altered.

Evidence was also shown of the need for organizing in-service training, which will satisfy the real needs of teachers. The organization of in-service training should be done in accordance with a plan designed in co-operation with all institutions involved in in-service training at the present time. Increasingly teachers will play different roles in schools. For instance some teachers will be in charge of management and administration, others of curriculum development, extra-curricular activities, of establishing relations with the local community, of research and so on. This obviously implies new in-service training needs.

9.6 Implications for the future

Some issues are common to the whole curriculum, geography has specific problems too. In spite of geography having a place in the curriculum, since the last century, other social and earth sciences are claiming a place in the school curriculum, which jeopardizes the 'security' of the subject in that curriculum.

Geographers must demonstrate the importance of the subject for students' education. Geographical education can make a very important contribution to world knowledge, to environmental awareness, to the development of capacities, skills, attitudes and values, which are indispensable to a future citizen, who will collaborate in the resolution of the problems of the contemporary world.

In Portugal, curriculum development in geography at school level faces many difficulties linked with the deficiency of trained staff, equipment, resources, and poor institutional organization. These are serious constraints for developing certain activities, such as: fieldwork, project work, as well as diversifying methods of teaching and implementing new techniques of assessment and evaluation, organizing team work and interdisciplinary work.

This work has given evidence of some of these difficulties and suggested

some solutions. Improvement of curriculum planning at general and school levels and of educational structures are essential for the development of education.

9.7 Suggestions for future research

This is the first piece of research on curriculum development issues, concerning geographical education in Portuguese secondary schools, submitted for a higher degree. Taking into account this fact a broad topic was chosen. An obvious strand to extending this research would be to concentrate on certain problems already approached in this work, such as:

- a) The process of curriculum development in geography:
 - Use of different models for curriculum planning in geography;
 - Use of different models and approaches for curriculum evaluation in geography;
 - Problems and perspectives for school-based curriculum development in secondary schools in Portugal.
- b) The geography curriculum:
 - The selection and organization of content;
 - Sociological and psychological considerations in geography curriculum design;
 - Geography and integration in the curriculum.
- c) Teacher training in geography:
 - Initial and in-service training in geographical science;
 - Initial and in-service training in geographical education;
 - Improvement of links between initial training in geographical science and in geographical education.
- d) Different aspects of school-based curriculum development:

- Introducing regional and local realities into the geography curriculum;
- The management of geographical resources;
- Teaching strategies and new technologies in geography teaching;
- The development of in-school curriculum evaluation and student assessment in geography;
- Geography in interdisciplinary areas and projects.

e) The students:

- Taking into account students' capacities and interests in geography curriculum planning;
- Role of students and parents in curriculum planning at school-level.

f) Links in the curriculum:

- The improvement of links between different levels of decision concerning the geography curriculum: national, regional and local (the school); and the links between geography and other subject areas;
- The improvement of links between different education levels: Basic and Secondary;
- The improvement of links between Higher and Secondary education.

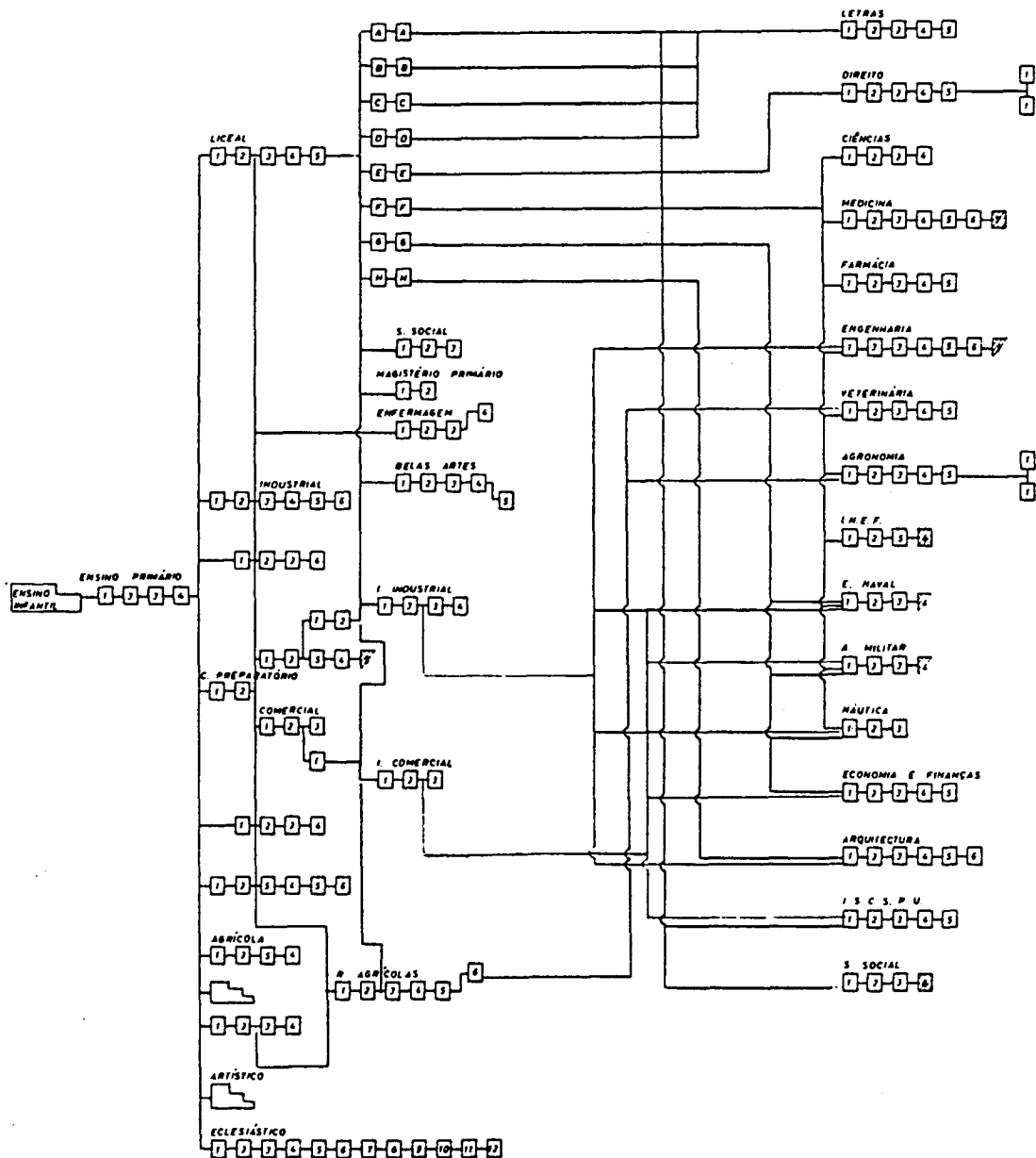
These are some examples of research topics that would be of considerable benefit in the process of curriculum development in geography in Portugal, nevertheless many other examples could be given.

A further analysis of the variability of provision between different districts would permit research work linking geographical science and geographical education which would contribute to a better knowledge and understanding of Portuguese regional realities.

APPENDICES

APPENDIX A

Structure of the Portuguese Education System



Fonte: *Análise Quantitativa da Estrutura Escolar Portuguesa, 1950-1959.*

Figure A.1
Structure of the Portuguese Education System, 1960.
 (Serrão, 1981, 31)

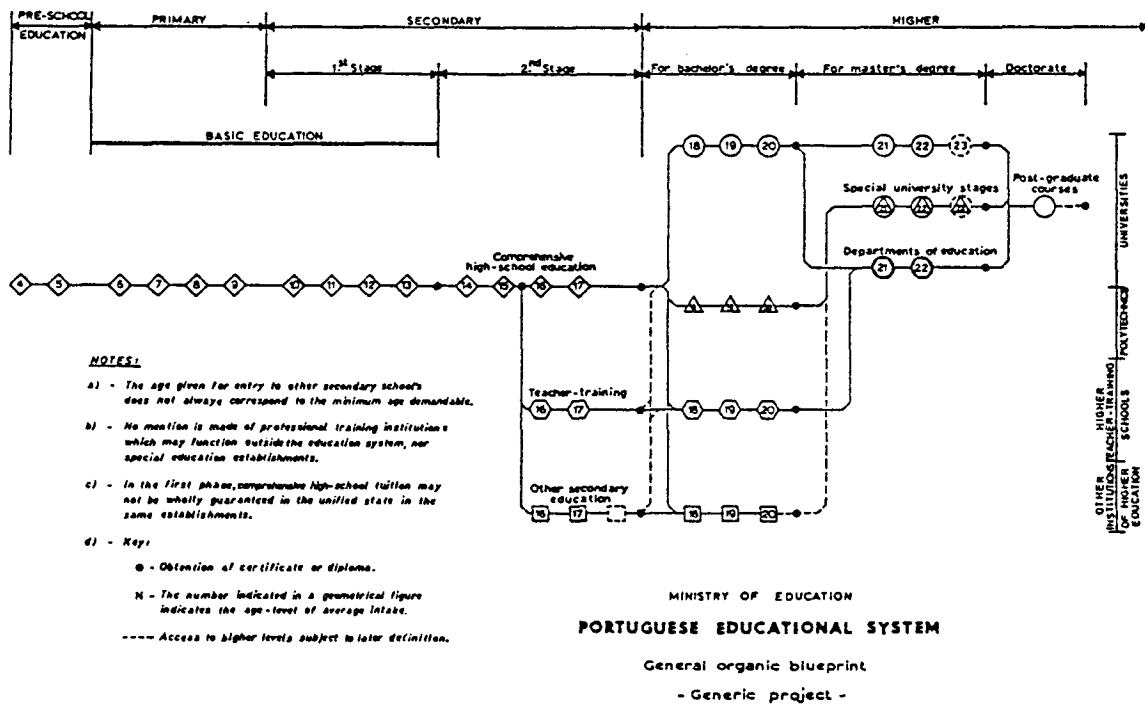
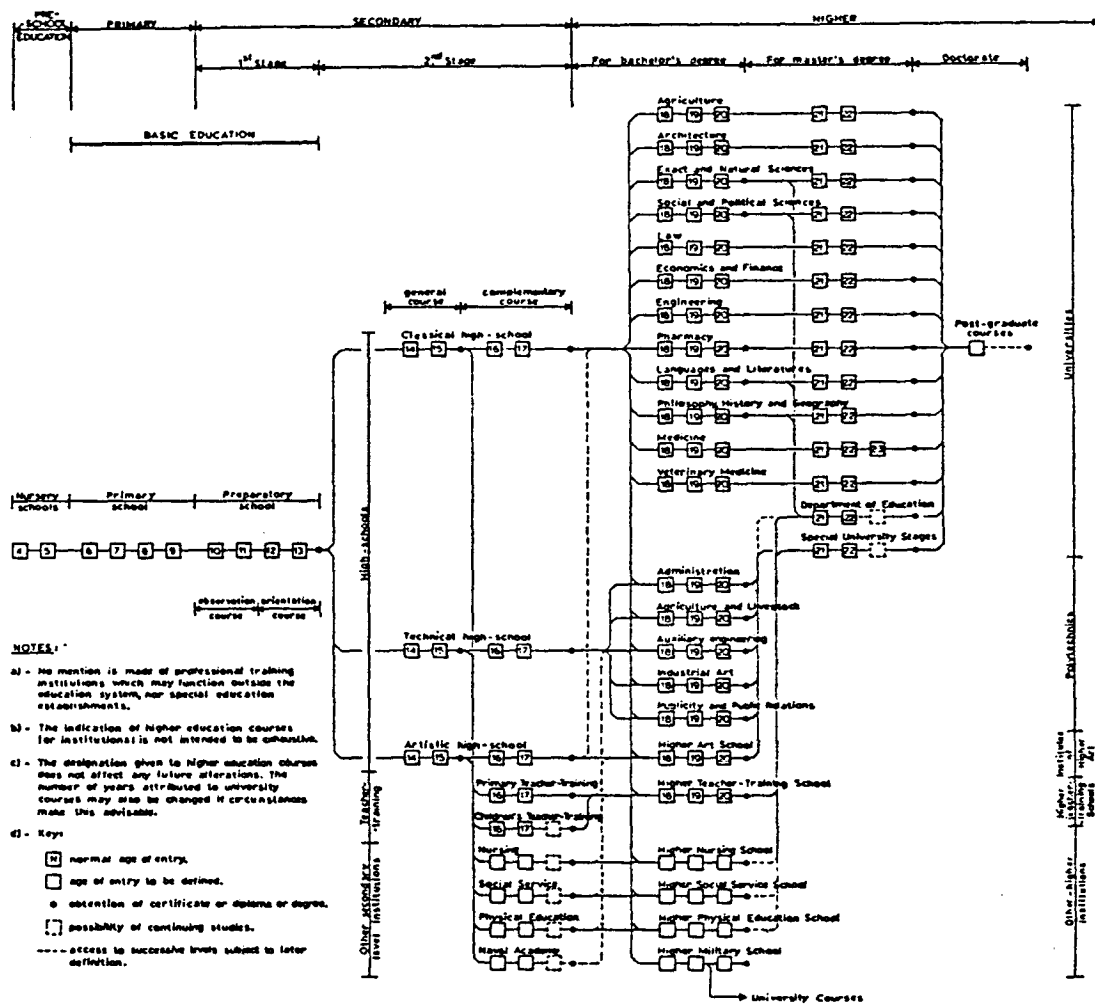


Figure A.2.1
Structure of the Portuguese Educational System (project of Minister of Education, Veiga Simão, 1972).
 (MEN, 1972, 181)



MINISTRY OF EDUCATION
PORTUGUESE EDUCATIONAL SYSTEM
 General organic blueprint
 - Project -

Figure A.2.2
 Structure of the Portuguese Educational System (project of Minister of Education, Veiga Simão, 1972).
 (MEN, 1972, 181)

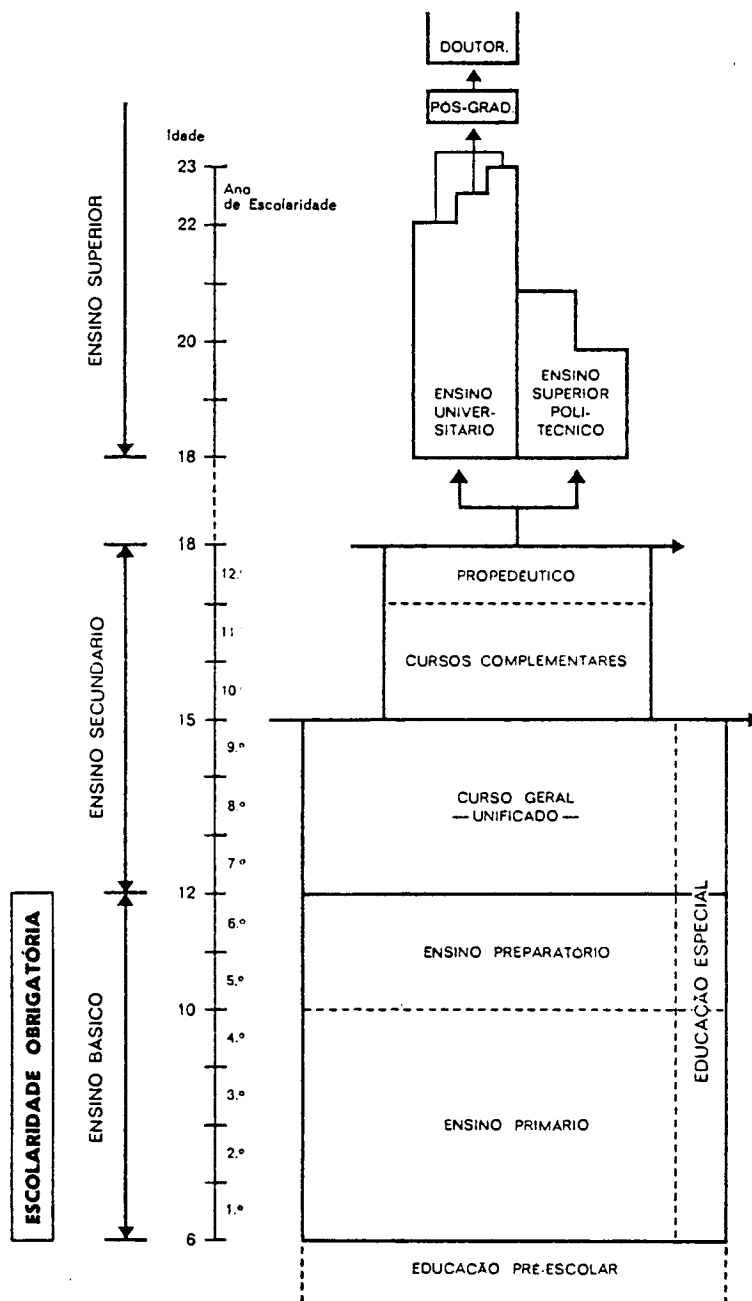


Figure A.3

Structure of the Portuguese Education System, 1979.
(Costa, 1981, 52)

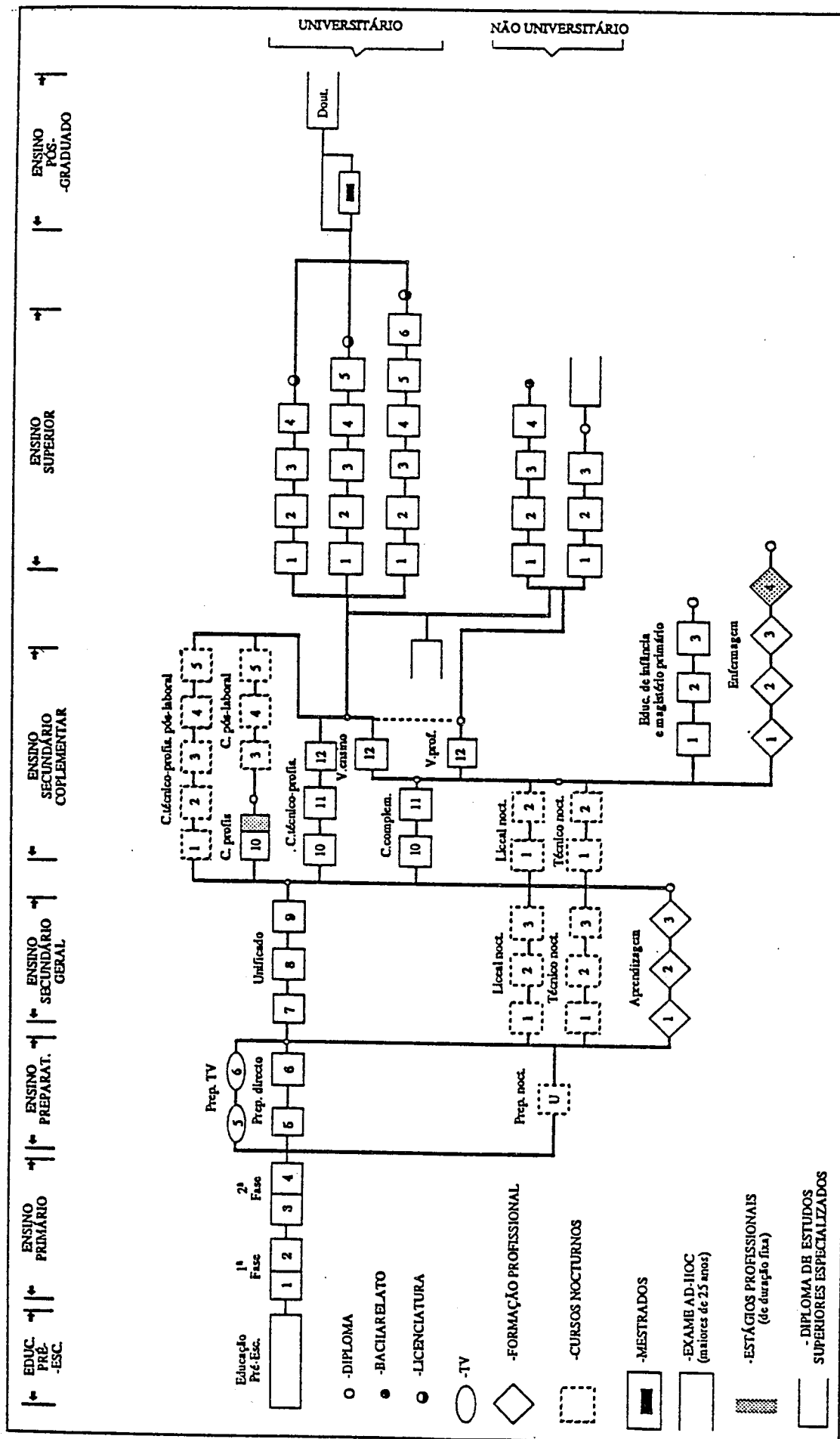


Figure A.4
 Structure of the Portuguese Education System, 1987/88.
 (GEP, 1990 c, 20)

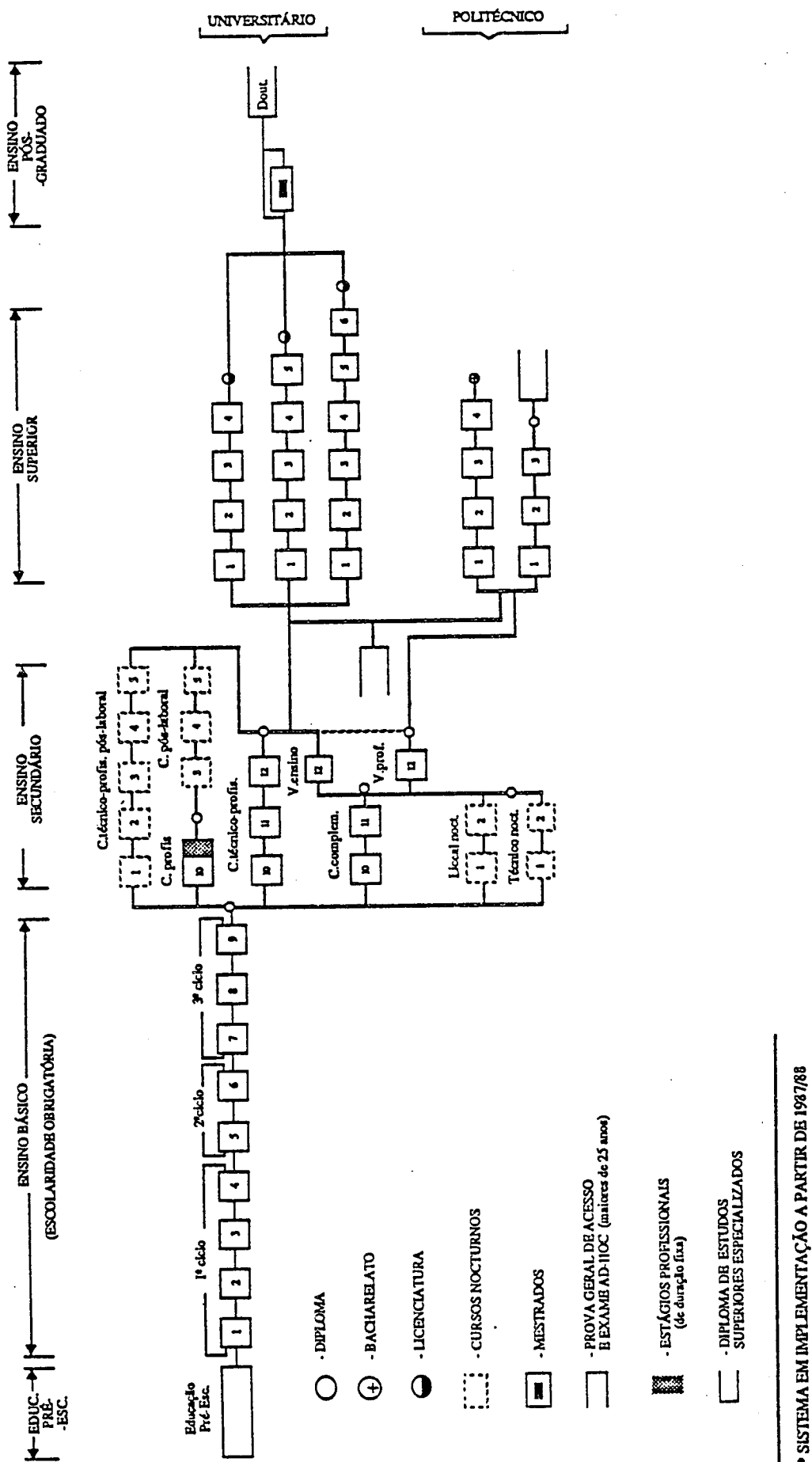


Figure A.5
Structure of the Portuguese Education System, according to the
'Comprehensive Law on the Education System', Law 46/86.
(GEP, 1990 c, 18)

APPENDIX B
Documents Cited in Chapter 4

Document B.1

Suggestion for the study of the topic North Africa - 3rd year
(Maya, 1971, 80-85)

SUGESTÃO PARA UMA ORIENTAÇÃO DO TEMA: A ÁFRICA DO NORTE — 3.º ANO

DESENVOLVIMENTO DA LIÇÃO:

- a) Caracteres gerais do quadro físico
 1. A morfologia
 2. O clima
 3. Vegetação, hidrografia e solos
- b) A população e os seus modos de vida
 1. Constituição

{	Berberes
{	Árabes
{	Europeus
 2. Densidade e distribuição
 3. A economia

{	agricultura de subsistência
{	vida pastoril
 4. Uma economia nova:
 - agricultura

{	novas técnicas
{	novas culturas
 - pesca
 - exploração mineira
 - o nascimento da indústria
 - desenvolvimento dos meios de comunicações
 - progresso das cidades

O *objectivo* da lição será mostrar como a África do Norte constitui uma região geográfica bem diferenciada do resto do Continente.

O estudo desta região proporcionará aos alunos um bom exemplo da interdependência dos factos naturais e humanos, quer históricos quer actuais.

Através da observação de mapas esquemáticos, de diapositivos e também de pequenas exposições, os alunos irão descobrindo a originalidade desta região.

A forma usada será, portanto, predominantemente interrogativa de modo a eles próprios encontrarem as razões dos factos observados, con-

cluírem sobre as suas próprias observações. Assim os alunos poderão tomar parte activa na sua aprendizagem.

MOTIVAÇÃO

Apresentar-se-ão algumas fotografias: umas, de paisagens e tipos humanos do Magrebe (Marrocos, por exemplo), e outras da África Negra. Os alunos estabelecerão os contrastes entre as duas regiões.

PREPARAÇÃO

Uma série de perguntas permitirá chamar a atenção dos alunos para a situação do Magrebe, «Ilha» (como lhe chamavam os orientais) entre o Mediterrâneo e o deserto do Sara, e para a originalidade da região não só no aspecto humano (já verificada na motivação) mas também no quadro físico. Os conhecimentos anteriores permitirão aos alunos fazer referência às montanhas novas e ao clima temperado.

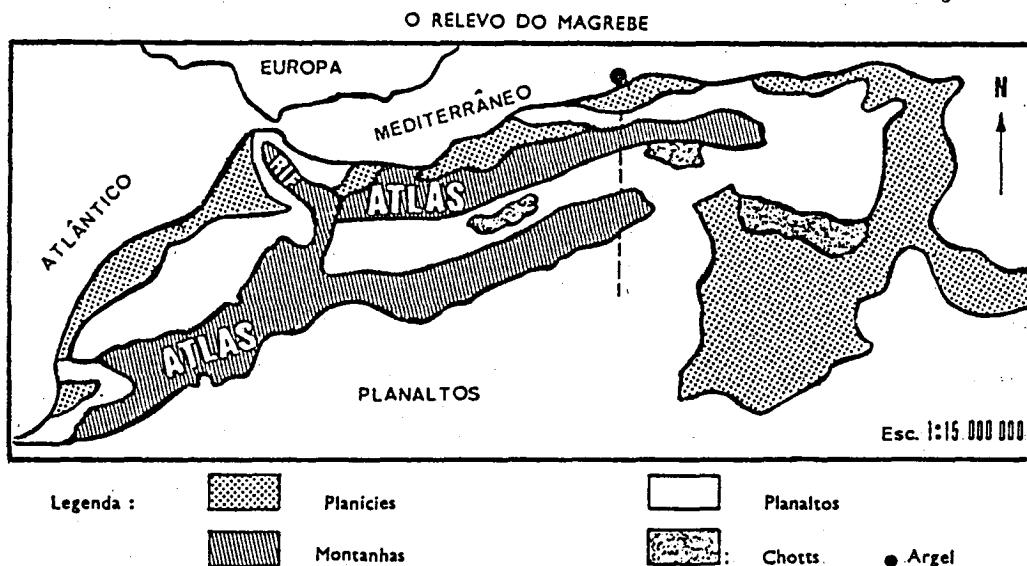
ELABORAÇÃO

- a) — 1. Observação dum esboço físico da região (fig. 1) utilizando o retro-projector ou, na falta deste, o epis-cópio.

Os alunos poderão notar:

- A elevada altitude média
- O predomínio dos planaltos e elevações
- A disposição das cadeias montanhosas

Fig. 1



2. A observação dum mapa esquemático com a distribuição da pluviosidade (fig. 2), a observação dum perfil transversal a partir da cidade de Argel (fig. 3) e a interpretação dum gráfico termopluviométrico (fig. 4) relativo à mesma cidade, permitirão não só estabelecer as principais características do clima, como também marcar as diferenças entre o litoral e o interior.
 3. A projecção de um diapositivo ou estampa poderá servir para chamar a atenção dos alunos para a pobreza da vegetação. As causas do facto poderão ser encontradas pelos próprios alunos mediante um interrogatório orientado. Far-se-á referência à insuficiência das chuvas, às características dos cursos de água, à mediocridade dos solos, à degradação da floresta por incêndio e pela acção dos rebanhos.
- b) — 1. Observando de novo as fotografias utilizadas durante a motivação, chamar-se-á a atenção dos alunos para os tipos humanos aí encontrados — populações brancas:
- Berberes, fundo do povoamento da região.
 - Árabes, que aí marcaram profundamente a sua influência.
 - Europeus (particularmente Espanhóis, Franceses e Italianos), que se estabeleceram a partir de meados do séc. XIX.
2. Recorrendo aos conhecimentos anteriores dos alunos sobre os aspectos gerais da população africana, focar-se-ão:
 - a densidade populacional da região em relação ao Continente;
 - a distribuição da população no Magrebe e suas causas.
 3. Como será a economia tradicional destas populações, introduzida pelos Árabes e hoje ainda praticada por muitos?
- Os alunos poderão, com certa facilidade, responder a esta questão. Tudo o que atrás foi visto lhes permitirá concluir por uma agricultura de subsistência e por uma vida nómada pastoril.
- Nesta altura será distribuído aos alunos um esboço com a divisão política, a fim de (com eles) se elaborar um mapa económico da região.

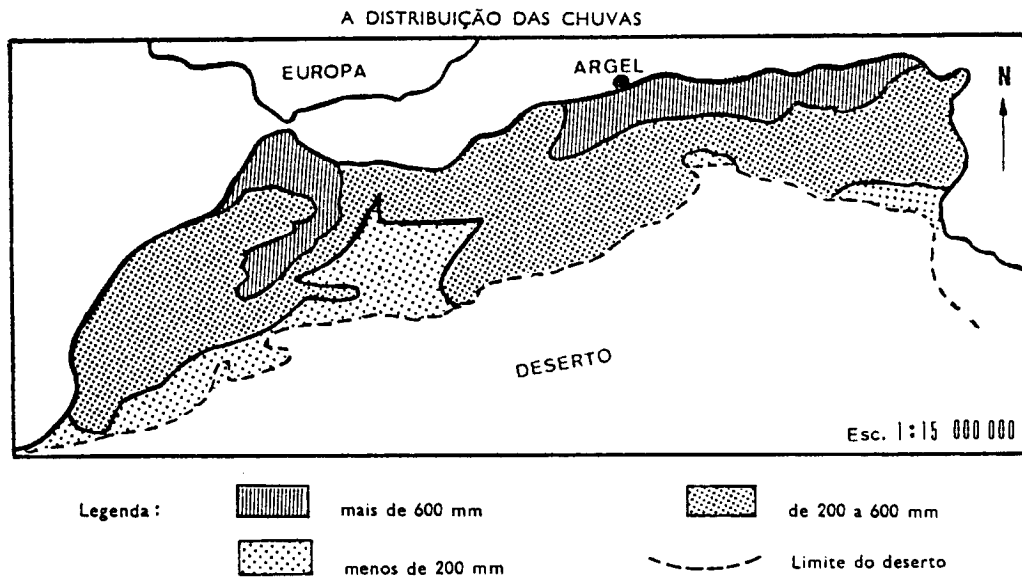


Fig. 2

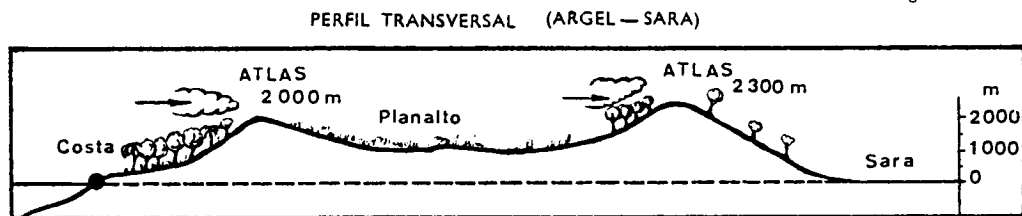


Fig. 3

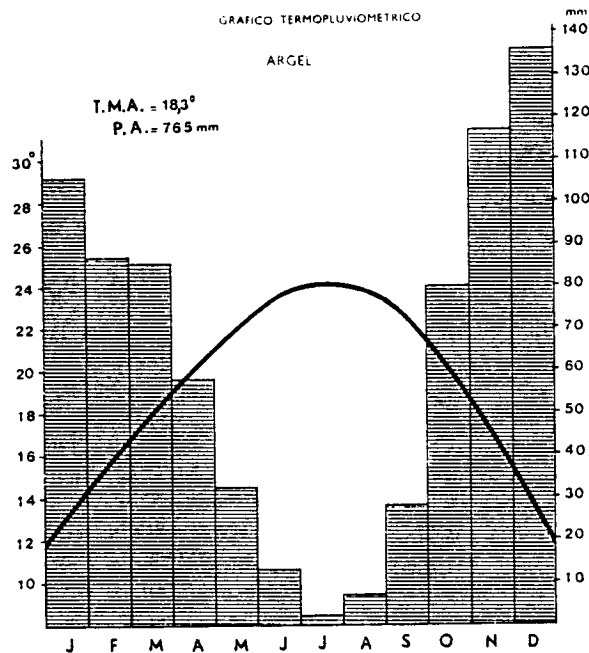


Fig. 4

A apresentação de alguns diapositivos (agricultura nova, pesca, exploração mineira, etc.) ou fotografias mostrará que, conjuntamente com aquele tipo de economia, existe um outro completamente diferente, introduzido, naturalmente, pelos Europeus:

- agricultura modernizada de rendimento. No esboço (fig. 5), os alunos, sob orientação do professor (que fará o mesmo no retro-projector ou no quadro), marcarão as zonas de:
 - Culturas hortícolas
 - Oliveira e árvores de fruta
 - Vinha
 - Cereais (trigo)
- A pesca, assinalando no esboço os principais portos (Safi, Tunes)

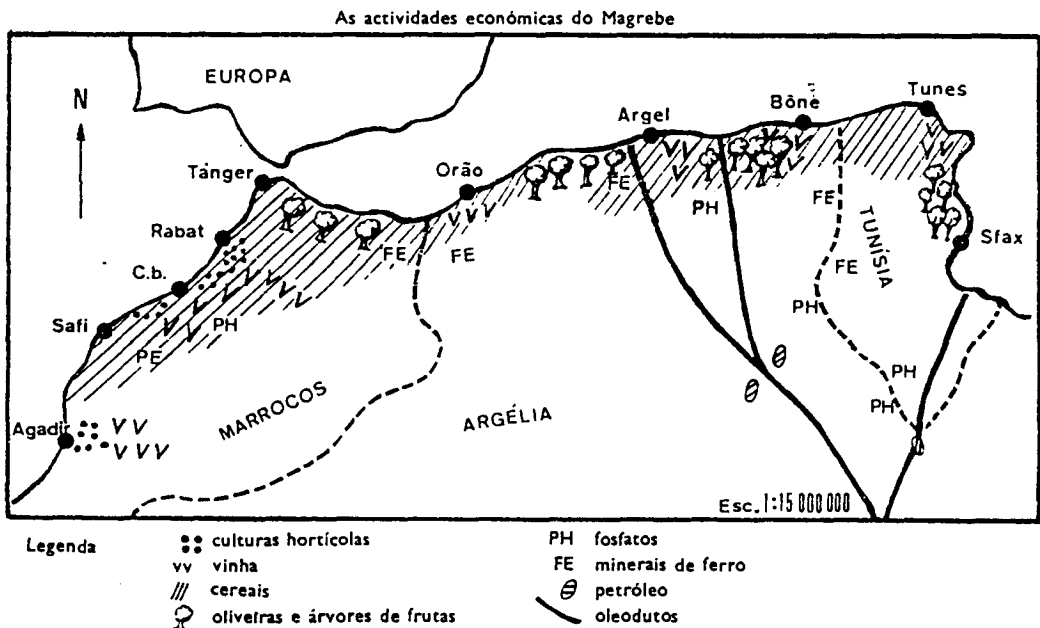
Fig. 5

- A exploração mineira (fosfatos, minerais de ferro e petróleo).

Procurar-se-á justificar a localização dessas áreas.

Este desenvolvimento das actividades primárias levou ao nascimento de indústrias (que poderão ser mencionadas pelos próprios alunos) e ao progresso dos meios de comunicação. E levou também ao desenvolvimento das cidades, conclusão tirada a partir da apresentação de dois diapositivos, marcando o contraste entre um núcleo populacional antigo e uma cidade moderna. Poder-se-ão, agora, assinalar no esboço mais algumas cidades importantes.

Nota: Será talvez possível, sobretudo se a turma não for muito numerosa, ocupar apenas com a lição, dois tempos de aula, um destinado à geografia física e outro à geografia humana.



BIBLIOGRAFIA

Para todos nós, desde os mais experientes aos que agora começam, é de grande utilidade ler ou reler algo do que se tem escrito (fruto, com certeza, de muita reflexão e experiência) sobre métodos de ensino em geral e particularmente sobre a didáctica própria da geografia.

É com intuito de tomarmos contacto com essas obras que sugiro aqui uma pequena bibliografia:

Didáctica Geral

- Aguayo — Didáctica da Escola Nova
- Charrier et Ozouf — Nouvelle pédagogie vécue (Nathan)
- Schmieder — Didáctica general (Editorial Losada, Buenos Aires)

Qualquer destas obras de carácter geral tem uma pequena parte dedicada especialmente à geografia.

Didáctica Especial

- Delteil et Maréchal — Comment enseigner la géographie locale et régionale (Nathan)

Apesar de se destinar ao ensino primário francês, este livro tem sugestões de trabalho de bastante interesse, mesmo para as nossas aulas liceais.

- Debesse — Arviset — La géographie à l'École (P. U. F.)

Este livro é um estudo interessante sobre uma pedagogia geográfica, programas e métodos de ensino.

- Lucien Febvre — La enseñanza de la Historia y de la Geografía.

A geografia activa é o tema desta pequena obra.

- Pedro Plans — Didáctica da geografia (Collecção Ponte)

Além de vários capítulos sobre os princípios didácticos e os materiais de ensino da geografia, o livro apresenta também alguns modelos de lições.

- UNESCO — L'enseignement de la géographie.

Bastante prático, este livro é um bom guia para o ensino eficaz da geografia.

Existe, também, uma edição desta obra em espanhol.

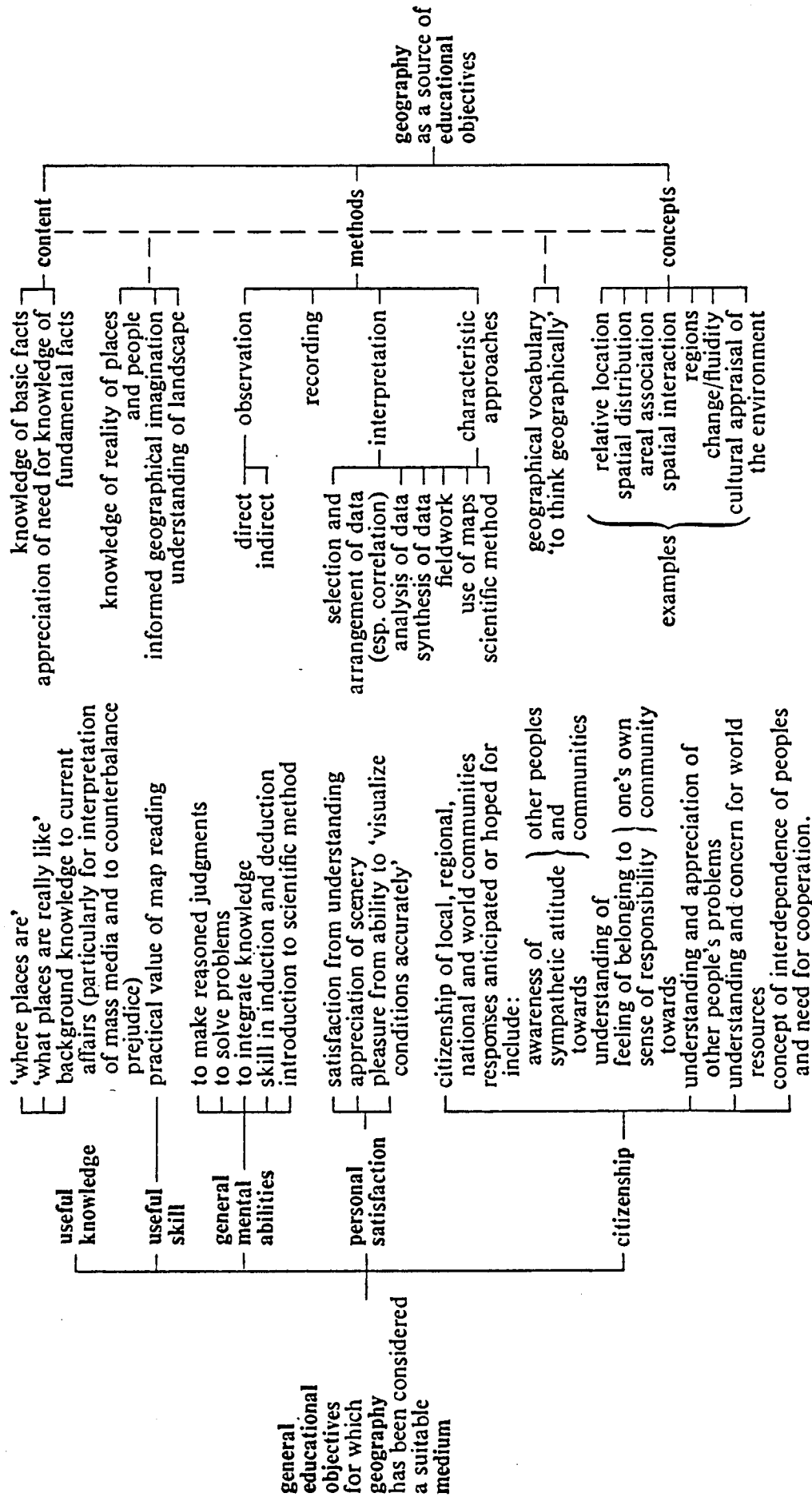
É muito possível que existam nesta lista lacunas importantes, por isso, também, neste aspecto, espero a colaboração dos colegas, indicando outros livros que porventura conheçam e nos possam ajudar, como professores de geografia.

MARIA JOSÉ DANTAS MAYA

Document B.2

**A classification of objectives that have been stated as appropriate for
geography in secondary schools**

(Bennetts, 1973, 166)



Document B.3

Geography in the School Curriculum 5-16

(The Geographical Association, 1981)

Geography in the School Curriculum 5 - 16



Introduction

The DES has pin-pointed the need to help pupils understand the world in which they live and the interdependence of individuals, groups and nations. (*A Framework for the School Curriculum*, paragraph 9). If this aim is to be met then geography must command a place in the education of children between the ages of five and sixteen.

The Special Contributions of Geography

Graphicacy The understanding and communication of spatial information through maps and other forms of illustration is a crucially important contribution of geography to the curriculum. Only in geography are pupils taught systematically to read and use maps.

World knowledge Through studying geography at school each pupil acquires special knowledge, skills and attitudes which are important resources required by adults as citizens of a complicated world. Geography, more than other subjects in the curriculum, helps the pupil to make sense of current events and informed judgements on economic, political, social and environmental issues. This is particularly important in a country like Britain which maintains its living standards by trading in increasingly competitive world-wide markets. The skills and knowledge acquired in geography classrooms in dealing with world knowledge are useful and vital.

International understanding Geography has a special role to play in fostering better understanding of different cultures, both within our own society and elsewhere in the world. Geography teachers acknowledge that pupils come to school with their own private views of the world and they seek to provide opportunities for the development of these views.

Environmental awareness Geography helps pupils to understand their environment and how man uses and misuses it. Through studying physical and human resources at a variety of scales from the immediate and local to the world as a whole, pupils learn to move from the familiar and concrete to the more distant, general and, perhaps, abstract. Geography seeks to satisfy and build upon the child's natural curiosity about the world.

Summary Traditionally geography in school has been concerned with explaining location and with comparisons and contrasts between places, regions and nations. In recent years there have been dramatic changes in the content of the subject and the methods used to study it. Thus in some schools older pupils can be seen using computers to solve real environmental problems while in others satellite photographs and a variety of maps and statistical information may be employed. Throughout these changes geography teachers have not lost sight of the need to acquaint pupils with a knowledge and a sense of place and a recognition of the conflicting pressures on beautiful natural landscapes and man-made scenery which need to be conserved.

The General Contributions of Geography

Combined studies There is a clear need to interrelate subjects in the curriculum. Learning acquired in one part of the curriculum should, where appropriate, be utilised elsewhere. While there may be certain advantages in courses which include contributions from several subjects, care must be taken to ensure that the unique contributions of geography, and indeed of other subjects, are developed and not lost in such combined studies schemes.

Links with other subjects Knowledge, skills and attitudes learned by pupils in geography lessons contribute to pupils' understanding of other subjects in the school curriculum. Thus geography contributes knowledge and skills for subjects as diverse as mathematics, history, economics, religious education, science and computer studies. Skills learned in geography, especially graphic skills associated with maps, have wide application elsewhere in the curriculum.

Literacy, numeracy and graphicacy Geography provides a vehicle for the application of knowledge, skills and attitudes learned elsewhere in the curriculum. This is particularly true in the areas of literacy and numeracy. Geographical information is recorded in verbal and numerical forms and to these geography adds its strong and particular contribution to graphicacy.

Social skills Geography shares with other subjects the potential for helping pupils to develop attitudes of tolerance towards other individuals and communities. Social skills may also be promoted through the joint planning of work, as in field work and through group discussions and participation in role-playing exercises, geographical games and simulations.

Geography 5 - 16

Course structure In the search for a coherent structure of geographical learning in which pupils progress through the stages of schooling, teachers require much support and encouragement. At each stage teachers must identify the ideas that will be most useful and interesting to pupils and structure these into syllabuses appropriate to the pupils at their level of development. Ideas taught at an early age must be returned to and refined. This implies a close liaison between teachers from all levels of schooling. A carefully planned programme will avoid unnecessary repetition and will guide the pupils purposefully through the years of primary education into the middle and secondary years.

5—11 By the age of eleven, pupils should have been introduced to the principal aspects of the physical environment (weather and surface features), patterns of settlement, dominant occupations and forms of transport, and the leisure and recreational facilities of their home areas. They should also have been introduced to the variety of environments in which people live both at home and overseas. In these latter studies teachers will seek to avoid any stereotyping of groups and nations and they and their pupils should have access to accurate, reliable and up-to-date sources of information.

11—16 In modern geography courses pupils gain understanding of issues and problems as well as knowledge of places and people. Included in the problems studied are changes in population, industrial location, foreign trade patterns, pollution and conservation. Courses in geography, in addition to giving the pupil a basic factual knowledge, emphasise the development of knowledge, skills and attitudes linked to geographical concepts and generalizations which appear interesting and significant to the adolescent. By the age of sixteen a pupil should have been introduced in a systematic way to the principal inter-relationships between man's activities and the physical environment, encompassing studies of population changes, farming systems, transport, industry, settlement, natural resources and landscape evolution.

Progression In the past, geography in school was viewed as a subject in which pupils were expected to accumulate large amounts of factual information. The focus was more upon accumulation than progression. Increasingly, geography teachers are endeavouring to match their courses to the development of the pupils' understanding. It is essential that teachers of successive age levels collaborate in their course planning.

Resources

The key to improving the teaching of geography in school lies in the provision of adequate in-service facilities for non-specialist teachers in primary schools and for specialist teachers in secondary schools. Pupils are unlikely to benefit fully from studying geography if they are denied opportunities to engage in field work, to study from well-written and up-to-date texts and to familiarise themselves with measuring instruments and data processing equipment. In particular the provision of modern maps and atlases is a special priority. Lacking these resources, pupils will be hindered in trying to make sense of their world. They are likely to leave our schools inadequately prepared to understand the local, national and international environments in which they live and which they will help to shape.

This statement is being circulated as a contribution to the current debate about the school curriculum. Further copies are obtainable from the Geographical Association.

January 1981

Document B.4

Geography in the National Curriculum

(DES, 1990)

4

Geography in the National Curriculum

"It is obvious that you must have some history and some geography; you are not a complete person unless you have that general knowledge"

The Rt Hon Margaret Thatcher MP in *The Sunday Telegraph*, 15 April 1990.

The nature of geography as

a discipline

- 4.1 The inclusion of geography as a foundation subject in the National Curriculum provides an excellent opportunity to establish geography teaching in schools on a firm and enduring foundation for the twenty-first century. This is a demanding task. We have tackled it by seeking to build on the present strengths of school geography as well as by reinforcing those parts of the structure which we believe to be inadequate.
- 4.2 We believe that geography is indispensable to understanding the modern world. It should be an exacting, challenging, but also enjoyable discipline.
- 4.3 We set out our broad understanding of the nature of geography as a discipline in the Interim Report. The definition was widely welcomed by those who commented and we restate it here:
- Geography explores the relationship between the Earth and its peoples through the study of place, space, and environment. Geographers ask the questions where and what; also how and why.
 - The study of place seeks to describe and understand not only the location of the physical and human features of the Earth, but also the processes, systems, and interrelationships that create or influence those features.
 - The study of space seeks to explore the relationships between places and patterns of activity arising from the use people make of the physical settings where they live and work.
 - The study of the environment embraces both its physical and human dimensions. Thus it addresses the resources, sometimes scarce and fragile, that the Earth provides and on which all life depends; the impact on those resources of human activities; and the wider social, economic, political, and cultural consequences of the interrelationship between the two.
- 4.4 These three elements – place, space and environment – form the core of geography. Uniquely, they create a bridge between the humanities and the physical

sciences. Geographical study should be pursued at local, regional, national, continental and global scales. Furthermore, changes are constantly under way: the examination of change in place, space and environment is integral to the study. Using a wide range of skills, the subject identifies, analyses, and helps to clarify some contemporary problems concerning peoples and their environments. In this sense geography also asks the question 'How ought?'

The Group's aims for geography in the National Curriculum

- 4.5 In formulating our aims for school geography, we had before us the requirement in section 1 of the 1988 Education Reform Act – reflected in our terms of reference – that the curriculum as a whole should promote the overall development of pupils and prepare them for the opportunities, responsibilities and experiences of adult life.
- 4.6 In the light of our understanding of the nature of geography, of the provisions of the Education Reform Act and of the purpose of the National Curriculum, we identified our aims for geographical education in schools. Our statement again commanded wide support among those responding to the Interim Report and we repeat it. We believe that geographical education should:
- stimulate pupils' interest in their surroundings and in the variety of physical and human conditions on the Earth's surface;
 - foster their sense of wonder at the beauty of the world around them;
 - help them to develop an informed concern about the quality of the environment and the future of the human habitat; and
 - thereby enhance their sense of responsibility for the care of the Earth and its peoples.
- 4.7 Moving on from the general statement, we concluded that the study of geography should more particularly aim at leading pupils to:

a) acquire a framework of knowledge about locations and places that will help them to set local, national, and international events within a geographical context, and that will support their development of geographical understanding;

b) understand some of the important characteristics of the Earth's major physical systems – its landforms, weather and climate, hydrological and ecological systems – and the interaction among those systems;

c) understand the significance of location and of distribution patterns in human activities and physical processes; how places are linked by movements of people, materials and information, and by physical, economic, social and political relationships; and the interdependence of people, places and environments throughout the world;

d) understand some of the relationships between people and environments, including both:

- i) the influence of environmental conditions on human activities, and
- ii) the varied ways in which societies with different technologies, economic systems and cultural values have perceived, used, altered and created particular environments;

e) develop a sense of place: a feeling for the 'personality' of a place and what it might be like to live there;

f) acquire knowledge and understanding about the physical and human processes that bring about changes in place, space, and environments, and a critical appreciation of the consequences of those changes;

g) develop awareness and appreciation of the ethnic, cultural, economic and political diversity of human society, and its geographical expression;

h) acquire the knowledge and develop the skills and understanding necessary to identify and investigate important cultural, social and political issues relating to place, space and environment, with sensitivity to the range of attitudes and values associated with such issues;

i) acquire techniques and develop skills and competencies necessary for geographical enquiry, and of value for other purposes, especially the making and interpretation of maps, the use of information technology and the conduct of fieldwork; and

j) develop intellectual and social skills, including the ability to observe, analyse, and communicate.

- 4.8 Because of its breadth of content and methodology, school geography has many links with other subjects in the curriculum and contributes strongly to cross-curricular themes, skills and dimensions (see Chapters 7 and 8). The aims stated above enable this to happen while focusing on what is specific to geography.

Achieving the aims of geographical education

- 4.9 For pupils to achieve both the broad and the more specific aims outlined in paragraphs 4.6 and 4.7 above, it is not sufficient merely to build on existing good practice. In order to address those areas of concern identified in Chapter 3 we believe that:

a) the basic content of geography should be clearly established, and the link retained between the academic heart of the discipline and developments in schools. This is not to ignore 'the needs of the child', nor to deny that such content can be packaged and taught in a variety of ways; we do not seek to usurp the functions of teachers. However, our remit instructed us to identify the elements of geography suitable for the National Curriculum, and this we have done;

b) place studies should be an important element. Case-studies of particular places need to be set within a clear framework of locational knowledge. After considerable discussion and trial, we have designed a progression of understanding in place studies (and thus in area-based attainment targets). We have sought to achieve a balanced coverage of the world's varied environments in a range of scales. Some of the respondents to the Interim Report seemed to suggest that we were putting the clock back by the desire to stipulate place content. This is a mistaken view. Knowledge is an essential foundation for many of the other ambitious goals voiced by some of our respondents and with which we agree;

c) the place and status of the physical and scientific elements of geographical study should be reaffirmed, since they are integral to a balanced and complete understanding of the subject. Recent global events have underlined the interdependence between physical environments and human actions. This synthesis is one of geography's distinctive characteristics, but is absent from some 'humanities' courses and under-represented even in some GCSE geography syllabuses; and

d) there should be greater clarity about the character and value of enquiry in the teaching and learning of geography. An enquiry approach to geographical study may be defined as one in which the teacher assists pupils to develop the abilities to ask questions and to seek to answer them through investigative work leading to sound knowledge, understanding and skill development. It does not imply that some teaching and learning approaches are better or more appropriate than others. It is for the

Document B.5

Comprehensive Law on the Education System (Law 46/86)
(ME-GEP, 1987)

CHAPTER II

Organisation of the education system

Article 4.

(General organisation of the education system)

- 1 - The education system includes pre-school, school and further education
- 2 - In its formative aspect pre-school education complements and/or supplements family education and cooperates closely with it.
- 3 - School education consists of basic, secondary and higher education and includes special types of schooling and leisure activities.
- 4 - Further education includes literacy and basic education, cultural and scientific improvement and up-dating and vocational training, reconversion and improvement, and is run in an open framework of multiple formal and informal initiatives

SECTION I

Pre-school education

Article 5.

(Pre-school education)

- 1 - The objectives of pre-school education are:
- a) To stimulate each child's abilities and further his upbringing and the balanced development of all his potential;
 - b) To contribute to the affective stability and security of the child;
 - c) To encourage observation and understanding of natural and human surroundings so that the child can integrate and participate more successfully;
 - d) To develop the moral education of the child and his sense of responsibility and freedom;
 - e) To develop the child's integration in different social groups complementary to the family so as to develop sociability;
 - f) To develop the child's creative imagination and ability to express himself and communicate, and also to stimulate play;
 - g) To instill a sense of hygiene and preservation of personal and collective health;
 - h) To avoid inadaptation, handicaps or premature development and foster the most favourable development of the child.

(Principles of Organisation)

Article 3.

The education system is organised so as to:

- a) Contribute to preserving the national identity and strengthening loyalty to the historical background of Portugal by raising awareness of the Portuguese nation's cultural heritage within the framework of the European universalist tradition and the increasing interdependence and essential solidarity between all nations of the world;
- b) Contribute to the pupils' fulfilment through complete development of personality, character formation and citizenship, prepare him for sensible consideration of spiritual, aesthetic, moral and civic values and provide him with balanced physical development;
- c) Ensure the civic and moral education of young people;
- d) Ensure the right to be different through respect for individual personalities and ambitions and consideration and appreciation of different learning and cultures;
- e) Develop a capacity for work and, on the basis of sound general education, provide specific education for occupying a valid position in working life to allow the individual to contribute to the progress of society in accordance with his interests, ability and vocation;
- f) Contribute to citizens' personal and community attainment, not only through education for the system of socially useful jobs but also through the practice and learning of creative use of free time;
- g) Decentralise, deconcentrate and diversify educational structures and actions so as to allow suitable adaptation to realities, a high degree of citizens' participation, appropriate involvement in the community and efficient decision making;
- h) Contribute to correcting uneven regional and local development so as to increase equality of access to the benefits of education, culture and science in all areas of the country;
- i) Guarantee second opportunity schooling to those who did not benefit from it at the normal age and to those who need the education system for professional or cultural reasons arising from the need to recycle or improve their skills due to the development of scientific and technological knowledge;
- j) Ensure equal opportunity for both sexes through coeducation and academic and professional guidance and raise the level of awareness of everyone involved in the educational process to achieve this purpose;
- k) Contribute to developing democratic spirit and practice by adopting participatory structures and processes for defining education policy, administering and running the school system and daily pedagogical experience involving everyone in the educational process, particularly students, teachers and families.

Article 7.

(Objectives)

The objectives of basic education are:

- a) To guarantee all Portuguese citizens a common general education which ensures they discover and develop their interests and aptitudes, ability to reason, memory and spirit of enquiry, creativity and sense of morals and aesthetic awareness, and promotes individual fulfilment in harmony with the values of social solidarity;
- b) To ensure that learning and learning how to do, theory and practice, educational and daily culture are balanced in this education;
- c) To provide physical and motor development, improve manual skills and promote artistic education so as to raise awareness of different forms of aesthetic expression by identifying and stimulating relevant attitudes;
- d) To provide learning of a first foreign language and the beginnings of a second one;
- e) To provide acquisition of the basic knowledge allowing students to continue their education or participate in vocational training schemes and also to facilitate the acquisition and development of personal and group working methods and tools and promote the human dimension of labour;
- f) To develop national awareness open to realities in a context of universalist humanism and international solidarity and cooperation;
- g) To develop understanding and appreciation of the values of Portuguese identity, language, history and culture;
- h) To provide pupils with experience furthering their civic and socio-affective maturity, instilling positive attitudes and habits of relating and cooperating, both regarding family connections and a conscious and responsible involvement in their surroundings;
- i) To further the acquisition of independent attitudes so as to develop citizens who are civically responsible and participate democratically in community life;
- j) To ensure children with special educational needs due to physical or mental handicap the facilities appropriate for them to develop and take full advantage of their abilities;
- k) To develop a liking for constant updating of knowledge;
- l) To participate in the process of educational information and guidance in collaboration with the family;
- m) To provide the acquisition of notions of civic and moral education within the bounds of free thinking;
- n) To establish the circumstances for stimulating academic and educational success for all pupils.

2 - These objectives will be sought via appropriate subjects, methods and techniques bearing in mind coordination with the family background.

3 - Pre-school education is for children between the ages of 3 and the age of admission to primary school.

4 - The State is responsible for providing a pre-school education network.

5 - The pre-school education network is made up of its own institutions organised by central, regional or local authorities and other collective or individual organisations, particularly parents and residents associations, civic and denominational, trade union and company organisations and social welfare institutions.

6 - The State should support pre-school educational institutions included in the public network by subsidising at least part of their running costs.

7 - The ministry in charge of coordinating education policy is responsible for defining the general standards of pre-school education on pedagogical and technical matters and for supporting and supervising their attainment and application.

8 - Pre-school education is optional, as it is acknowledged that the family plays an essential role in the pre-school education process.

SECTION II

School education

SUBSECTION I

Basic education

Article 6.

(Universality)

1 - Basic education is universal, compulsory and free and lasts for nine years.

2 - Children who are more than 6 years of age on 15 September go into basic education.

3 - Children who are 6 years of age between 16 September and 31 December may enter basic education if this is requested by the person in charge of education, in terms to be regulated.

4 - Compulsory attendance of basic education ends at 15 years of age.

5 - Basic education is free in terms of fees, tariffs and emoluments relating to enrolment, attendance and certification and students enjoy free use of school books and materials and also transport, board and lodging when necessary.

Article 8.

(Organisation)

1 - Basic education consists of three consecutive cycles. The 1st. lasts for four years, the 2nd. for two years and the 3rd. for three years, and they are organised as follows:

- a) In the 1st. cycle education is global and administered by a single teacher who may be assisted in specialised areas;
- b) In the 2nd. cycle teaching is organised according to interdisciplinary areas of basic education and is mainly administered by teachers specialising in a particular area;
- c) In the 3rd cycle teaching is organised into a unified curriculum including diversified vocational areas and is administered by a teacher responsible for each subject or group of subjects.

2 - The cycles interrelate by progressive sequencing giving each cycle the function of completing, deepening and widening the previous cycle in the context of the overall unity of basic education.

3 - The specific objectives of each cycle form part of the general objectives of basic education according to the previous points and in accordance with the corresponding age group development, the following specific characteristics being particularly important:

- a) In the 1st. cycle, the development of oral language and initiation and progressive mastery of reading and writing, basic notions of arithmetic and calculation, the physical and social environment, and artistic, dramatic, musical and motor expression;
- b) In the 2nd. cycle, humanistic, artistic and physical education and sports, scientific and technological and moral and civic education designed to equip pupils to critically and creatively assimilate and interpret information to facilitate the acquisition of working methods and tools and the knowledge to allow their education to continue within the context of developing active and conscious attitudes to the community and its most important problems;
- c) In the 3rd. cycle, the systematic and differentiated acquisition of modern culture in terms of its humanistic, literary, artistic, physical and sports, scientific and technological aspects, which is essential for entering working life and continuing with studies, and also the academic and vocational guidance which facilitates the choice of subsequent education or entry to working life with respect for the individual's independent self-fulfilment.

4 - In specialised basic education schools artistic and physical education and sports may be reinforced without prejudice to basic education.

5 - On successful conclusion of basic education the pupil obtains the right to a certificate, and successful conclusion of any year or cycle also confers the same right if requested.

SUBSECTION II

Secondary education

Article 9.

(Objectives)

The objectives of secondary education are:

- a) to guarantee the development of reasoning, reflection and scientific curiosity and expansion of the basic elements of a humanistic, artistic, scientific and technical culture constituting an appropriate cognitive and methodological basis for future studying and entry into working life;
- b) To provide young people with the knowledge essential for understanding aesthetic and cultural expression and to facilitate the improvement of artistic expression;
- c) To foster the acquisition and application of an increasingly deep knowledge based on studying, critical consideration, observation and experimentation;
- d) On the basis of the realities of regional and national life and appreciation for the permanent values of society in general and Portuguese culture in particular, to educate young people interested in solving the country's problems and aware of the problems of the international community;
- e) To facilitate contact with and experience of the working world, strengthening the connections between school, working life and the community and stimulating the innovative and participatory function of the school;
- f) To foster the vocational guidance and education of young people by means of technical and technological training with a view to their entry into working life;
- g) To create individual and group working habits and foster the development of methodical consideration, open-mindedness, awareness and acceptance and adaptation to changes.

Article 10

(Organisation)

- 1 - Pupils successfully completing basic education may join any secondary education course
- 2 - Secondary education courses last for three years
- 3 - Secondary education is organised according to differentiated systems including courses mainly geared to working life or to continued studies, and all of them include education of a technical, technological and professional nature and education in the Portuguese language and culture appropriate to the nature of the different courses.
- 4 - Permeability is guaranteed between courses mainly geared to working life and those mainly geared to further studies.
- 5 - Successful conclusion of secondary education confers the right to a certificate testifying to the education received and, for courses mainly geared to working life, the qualification obtained for the purposes of carrying out specific professional activities.
- 6 - In secondary education each teacher is responsible in theory for one subject only.
- 7 - Specialised establishments equipped for the teaching and practice of

APPENDIX C

Portuguese Secondary Education Geography Syllabuses (9th and 12th years)

Document C.1

9th year Geography Syllabus
(DGES, 1983)



MINISTÉRIO DA EDUCAÇÃO
DIRECÇÃO-GERAL DO ENSINO SECUNDÁRIO

PROGRAMA DE GEOGRAFIA - 9º Ano

I - OBJECTIVOS GERAIS

- Adquirir o método e técnicas simples de investigação no domínio da Geografia humana.
- Compreender o Mundo em que se vive, na sua unidade e diversidade.
- Aplicar as técnicas adquiridas ao estudo de casos elementares.
- Analisar problemas do Mundo contemporâneo, numa perspectiva geográfica.

Ensino Secundário

Curso	CURSO GERAL UNIFICADO
Disciplina	GEOGRAFIA
Título	
Anos de Curso	9º ANO
Observações	Em vigor a partir do ano lectivo de 1983/84.

II - ESQUEMA PROGRAMÁTICO

1. População mundial

- 1.1. Evolução da população mundial. Sua explicação.
- 1.2. Distribuição espacial.

2. Os grandes contrastes da agricultura no mundo actual.

2.1. Europa - Os sistemas agrários dominantes.

2.1.1. Na Europa Mediterrânea

2.1.2. Na Europa Ocidental

2.2.2. Na Europa de Leste.

2.2. América.

2.2.1. Anglo-Saxónica

2.2.2. Latina

2.2.2.1. Sistemas de agricultura tradicional.

2.2.2.2. Sistemas de agricultura moderna.

2.3. África.

2.3.1. Sistemas de agricultura tradicional

2.3.2. Sistemas de agricultura moderna.

2.4. Ásia

2.4.1. Sistemas de agricultura tradicional

2.4.2. Sistemas de agricultura moderna.

3. Contrastes da industrialização no mundo actual

3.1. Europa.

3.1.1. A origem da indústria moderna.

3.1.2. As grandes concentrações industriais.

3.1.3. Áreas do fraco desenvolvimento industrial.

3.2. América

3.2.1. Anglo-Saxónica

3.2.2. Latina

3.3. África

3.4. Ásia

3.4.1. Os complexos industriais no Japão, na China e na União Indiana

3.4.2. Os países do petróleo.

4. As cidades no mundo.

4.1. Tipos de cidades.

4.1.1. A cidade Europeia

4.1.2. A cidade Norte Americana

4.1.3. A cidade da América Latina.

4.1.4. A cidade Africana.

4.1.5. A cidade Asiática.

4.2. As grandes concentrações urbanas: factores de localização.

4.3. Problemas das grandes concentrações urbanas.

III - OBJECTIVOS DIDÁCTICOS OPERACIONAIS

1. População Mundial.

pretende-se, com as aprendizagens que se vão realizar ao longo desta unidade didáctica, que os alunos sejam capazes de:

1. Caracterizar os ritmos de crescimento demográfico antes e depois da Revolução Industrial.
2. Caracterizar a evolução da taxa de natalidade antes e depois da Revolução Industrial.
3. Caracterizar a evolução da taxa de mortalidade antes e depois da Revolução Industrial.
4. Justificar os diferentes ritmos de crescimento da população mundial.
5. Explicar a ocorrência da "explosão demográfica".

6. Explicar a ocorrência do "baby boom".
7. Explicar os tipos de evolução demográfica em países industrializados.
8. Explicar os tipos de evolução demográfica em países não industrializados.
9. Interpretar gráficos de evolução da população mundial.
10. Referir as consequências dos diferentes tipos de evolução demográfica na estrutura etária da população.
11. Justificar a existência de pirâmides de idades correspondentes a diversos tipos de estrutura etária.
12. Diferenciar áreas com diferentes tipos de estruturas etárias.
13. Justificar a existência de áreas de atracção da população.
14. Justificar a existência de áreas de repulsão da população.
15. Mostrar as consequências dos movimentos migratórios na evolução da população, nas áreas de partida e de chegada.
16. Mostrar as consequências da movimentação da população na estrutura etária.
17. Diferenciar as características da população de diversas áreas do globo.
18. Localizar as áreas de grande concentração da população mundial.
19. Localizar as áreas de fraca ou nula ocupação humana.
20. Relacionar a distribuição da população mundial com os factores físicos.
21. Relacionar a distribuição da população mundial com os factores humanos.
22. Interpretar mapas da distribuição da população mundial.
2. Os grandes contrastes da agricultura no mundo actual
 Pretende-se, com as aprendizagens que se vão realizar ao longo desta unidade didáctica, que os alunos sejam capazes de:
 1. Caracterizar os sistemas agrários tradicionais, na Europa mediterrânea.
 2. Referir as principais transformações introduzidas nesses sistemas agrários pela modernização da agricultura
 3. Justificar essas transformações em função das características da agricultura moderna.
 4. Caracterizar os sistemas agrários tradicionais, na Europa Ocidental.
 5. Referir as principais transformações introduzidas nesses sistemas agrários pela modernização da agricultura
 6. Justificar essas transformações em função das características da agricultura moderna.
 7. Caracterizar o sistema de agricultura dominante na Europa Central e de Leste.
 8. Caracterizar as principais etapas da evolução da agricultura na U.R.S.S., até à actualidade.
 9. Justificar cada uma dessas etapas.
 10. Relacionar os tipos de criação de gado com os diversos sistemas agrários da Europa.
 11. Relacionar os diversos sistemas agrários da Europa com a densidade da população.
 12. Relacionar os diversos sistemas agrários da Europa com a estrutura da população activa.
 13. Caracterizar os sistemas agrários dominantes na América Anglo-Saxónica.

14. Relacionar a forma geométrica dos campos com a colonização.
 15. Relacionar os tipos de criação de gado com os diversos sistemas agrários da América Anglo-Saxônica.
 16. Relacionar os diversos sistemas agrários da América Anglo-Saxônica com a densidade da população.
 17. Relacionar os diversos sistemas agrários da América Anglo-Saxônica com a estrutura da população activa.
 18. Caracterizar o sistema de agricultura itinerante, na América Latina.
 19. Caracterizar o sistema de agricultura de plantação, na América Latina.
 20. Relacionar o sistema de agricultura de plantação na América Latina com a colonização.
 21. Caracterizar a agricultura moderna, nas planícies da região temperada da América Latina.
 22. Relacionar a permanência da agricultura de subsistência com a densidade de população.
 23. Relacionar a permanência da agricultura de subsistência com a estrutura da população activa.
 24. Relacionar os sistemas agrários da América Latina com as características da criação de gado.
 25. Caracterizar os sistemas de agricultura tradicionais do África.
 26. Justificar a permanência desses sistemas de agricultura tradicional.
 27. Relacionar a permanência dos sistemas de agricultura tradicional em África com a densidade da população.
 28. Relacionar a permanência dos sistemas de agricultura tradicional em África com a estrutura da população activa.
 29. Caracterizar os sistemas de agricultura moderna em África.
 30. Relacionar os sistemas de agricultura moderna em África com a colonização.
 31. Caracterizar os sistemas de agricultura tradicionais na Ásia.
 32. Justificar a permanência desses sistemas de agricultura tradicional.
 33. Relacionar a permanência dos sistemas de agricultura tradicional com a densidade da população.
 34. Caracterizar os sistemas de agricultura moderna na Ásia.
 35. Relacionar as características da agricultura do Japão com as exigências da economia moderna.
 36. Referir as principais etapas da evolução da agricultura na China.
 37. Justificar cada uma dessas etapas.
 38. Relacionar as transformações da agricultura na China com a densidade da população.
3. Contrastes da industrialização no Mundo actual.
- Pretende-se, com as aprendizagens que se vão realizar ao longo desta unidade didáctica, que os alunos sejam capazes de:
1. Justificar a eclosão da Revolução Industrial no espaço e no tempo.
 2. Descrever a difusão da Revolução Industrial no espaço.

3. Caracterizar as diversas fases da Revolução Industrial.
4. Relacionar a evolução do consumo energético com as etapas da Revolução Industrial.
5. Caracterizar a evolução da natureza do trabalho industrial.
6. Relacionar a evolução da natureza do trabalho industrial com as etapas da Revolução Industrial.
7. Relacionar a evolução da estrutura da população activa com a natureza do trabalho Industrial.
8. Localizar as principais concentrações industriais da Europa.
9. Relacionar as principais concentrações industriais da Europa com as bacias de ferro e carvão.
10. Relacionar as principais concentrações industriais da Europa com a proximidade de portos importadores...
11. Relacionar as principais concentrações industriais da Europa com as vias de comunicação.
12. Dar exemplos de indústrias existentes nas grandes concentrações industriais da Europa.
13. Justificar a grande diversidade da indústria europeia.
14. Explicar o fraco desenvolvimento industrial da Europa do Sul.
15. Relacionar o desenvolvimento industrial da Europa do Norte e do Sul com as respectivas estruturas da população activa.
16. Relacionar as grandes concentrações industriais com a distribuição da população.
17. Relacionar cronologicamente o desenvolvimento da indústria da América Anglo-Saxónica com a Europa.
18. Localizar as principais concentrações industriais da América Anglo-Saxónica.
19. Relacionar cada uma dessas concentrações industriais com as bacias de ferro, carvão e petróleo.
20. Justificar o incremento de indústrias junto aos litorais Atlântico e Pacífico.
21. Demonstrar a influência do desenvolvimento industrial na evolução da estrutura da população activa.
22. Relacionar a distribuição espacial das indústrias com a repartição da população.
23. Justificar a importância dos U.S.A. no contexto da indústria mundial.
24. Localizar as principais áreas industriais da América Latina.
25. Dar exemplos de indústrias dominantes nessas áreas.
26. Justificar a localização dessas áreas industriais.
27. Demonstrar a importância do potencial energético e minério da América Latina.
28. Referir os factores favoráveis ao desenvolvimento industrial da América Latina.
29. Referir a importância da América Latina como fornecedora de matérias primas no contexto da indústria mundial.
30. Explicar o atraso do desenvolvimento industrial da América Latina.
31. Relacionar o atraso do desenvolvimento industrial com a estrutura da população activa.
32. Relacionar as características do desenvolvimento industrial com a distribuição da população.
33. Localizar as principais bacias mineiras africanas.

34. Localizar as principais áreas industriais.
 35. Demonstrar a importância da África como fornecedora de matérias primas, no contexto da indústria mundial.
 36. Relacionar o incipiente desenvolvimento da indústria africana com a colonização.
 37. Relacionar o atraso do desenvolvimento industrial com a estrutura da população activa.
 38. Localizar os grandes complexos industriais da Ásia.
 39. Justificar a localização dessas áreas industriais.
 40. Referir a importância da produção do petróleo do Médio Oriente, no contexto da produção mundial.
 41. Referir os principais problemas resultantes da importância do petróleo asiático, no contexto da economia mundial.
 42. Justificar o fraco desenvolvimento industrial dos países produtores de petróleo.
 43. Caracterizar as fases do desenvolvimento industrial japonês.
 44. Diferenciar as características do desenvolvimento industrial do Japão das da China e das da União Indiana.
 45. Explicar o papel do incremento industrial na resolução dos problemas demográficos.
 46. Demonstrar a influência do desenvolvimento da indústria na evolução da estrutura da população activa.
- IV - AS CIDADES NO MUNDO
- Pretende-se, com as aprendizagens que se vão realizar ao longo desta unidade didáctica, que os alunos sejam capazes de:
1. Relacionar o crescimento das cidades europeias com a Revolução Industrial.
 2. Relacionar a evolução da taxa de urbanização com a estrutura da população activa.
 3. Demonstrar a influência do desenvolvimento urbano na estrutura da população activa.
 4. Relacionar o crescimento das cidades europeias com o desenvolvimento da rede de transportes.
 5. Identificar diferentes tipos de plantas nas cidades europeias.
 6. Caracterizar tipos de plantas:
 - Irregular
 - ortogonal
 - radioconcentrica.
 7. Relacionar os tipos de plantas com as diferentes fases de crescimento das cidades.
 8. Distinguir as diversas áreas funcionais de uma cidade.
 9. Caracterizar cada uma dessas áreas funcionais.
 10. Localizar as grandes concentrações urbanas europeias.
 11. Justificar cada uma dessas concentrações urbanas.
 12. Dar exemplos de problemas criados pelas grandes concentrações urbanas.
 13. Localizar as grandes concentrações urbanas na América Anglo-Saxónica.
 14. Justificar cada uma dessas concentrações.
 15. Relacionar a evolução da taxa de urbanização com a estrutura da população activa.
 16. Demonstrar a influência do desenvolvimento urbano, na estrutura da população activa.
 17. Identificar tipos de plantas nas cidades Norte Americanas.
 18. Relacionar as características dos diferentes bairros residenciais com o nível sócio-económico da população.

19. Relacionar as características dos diferentes bairros residenciais com a origem da população residente.
20. Relacionar a expansão das cidades com o desenvolvimento da rede de transportes.
21. Relacionar a expansão das cidades com as características dos meios de transporte.
22. Relacionar a distribuição das grandes cidades com as etapas da colonização Norte Americana.
23. Localizar as grandes concentrações urbanas na América Latina.
24. Justificar cada uma dessas concentrações.
25. Relacionar a localização das cidades Latino-Americanas com a colonização.
26. Demonstrar a influência do desenvolvimento urbano na estrutura da população activa.
27. Identificar tipos de plantas nas cidades Latino- Americanas.
28. Explicar a existência desses tipos de plantas em função da colonização.
29. Relacionar o crescimento das cidades com o êxodo rural.
30. Relacionar o crescimento das cidades com o crescimento natural da sua população.
31. Justificar as dimensões dos bairros da lata das cidades Latino-Ameri-
canas.
32. Caracterizar os diferentes bairros residenciais em função do nível
socio-económico da população.
33. Localizar as grandes cidades africanas.
34. Justificar a localização dessas cidades.
35. Relacionar a localização das cidades africanas a sul do Sahara com a
colonização.
36. Relacionar a taxa de urbanização com a estrutura da população activa
37. Identificar tipos de plantas nas cidades africanas a Norte do Sahara.
38. Identificar tipos de plantas nas cidades africanas a Sul do Sahara.
39. Relacionar os tipos de plantas com a origem histórica das cidades
africanas.
40. Caracterizar as cidades muçulmanas do Norte de África.
41. Relacionar as características das diferentes áreas das cidades do
Norte de África com a etnia da população.
42. Explicar a influência da colonização na existência de áreas diferen-
ciadas nas cidades do Norte de África.
43. Relacionar as características das diferentes áreas das cidades do Nor-
te de África com o nível socio-económico da população.
44. Relacionar as características das diferentes áreas residenciais das
cidades africanas a Sul do Sahara com o nível socio-económico da popu-
lação.
45. Relacionar as características das cidades da África do Sul com a co-
lonização.
46. Relacionar o crescimento das cidades com o êxodo rural.
47. Localizar as grandes cidades asiáticas.
48. Localizar as concentrações urbanas do Japão.
49. Justificar as concentrações urbanas do Japão.
50. Relacionar a taxa de urbanização com a estrutura da população acti-
va.
51. Relacionar a estrutura interna das cidades com a sua origem histó-
rica.
52. Explicar a influência da colonização na existência de áreas dife-
renciadas nas cidades do sul da Ásia.
53. Justificar as características ocidentais das cidades Japonesas.

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Document C.2

12th year Geography Syllabus
(DGES, 1980)

PROGRAMA

DE

GEOGRAFIA

DO

12.º ANO DE ESCOLARIDADE

OBJECTIVOS GERAIS

1. Desenvolver o gosto pelos trabalhos de pesquisa e de investigação em Geografia.
2. Incentivar a utilização dos novos métodos de análise em Geografia.
3. Estimular o conhecimento dos problemas nacionais e internacionais de modo a desenvolver a compreensão do Homem acerca do Mundo em que vive.

Junho de 1980

ESQUEMA PROGRAMÁTICO

A – INTRODUÇÃO

1 – A Geografia no contexto das Ciências.

- 1.1 – A Geografia e as Ciências da Terra.
- 1.2 – A Geografia e as Ciências Humanas.

2 – Grandes correntes da Geografia.

2.1 – Evolução histórica.

2.2 – Situação actual.

2.2.1 – Geografia qualitativa.

2.2.2 – Geografia quantitativa.

3 – Conceitos básicos da análise geográfica.

3.1 – Escala de análise e escala de observação.

3.2 – Conceito de distância.

3.2.1 – Distância absoluta.

3.2.2 – Distância relativa: distância custo e distância-tempo.

3.3 – Recolha e apresentação da informação.

3.3.1 – Noção de amostra.

3.3.2 – Métodos de amostragem.

3.3.3 – Quadros de frequência.

3.3.4 – Leitura e execução de mapas em escalas diferentes.

3.3.5 – Representação da informação.

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B — Reflexos da actividade produtiva na organização do espaço

1 — Organização do espaço agrícola

- 1.1 — Paisagens agrárias e níveis de desenvolvimento.
- 1.2 — Factores condicionantes da organização do espaço agrícola.
 - 1.2.1 — Factores físicos: Clima-Solo-Água.
 - 1.2.2 — Factores humanos: Demográficos-Históricos-Sociais.
- 1.3 — Modelo de Von Thünen.
- 1.4 — Produção agrícola.
 - 1.4.1 — Zonalidade das áreas de produção.
 - 1.4.2 — Áreas complementares.
 - 1.4.3 — Fluxos de produtos agrícolas.

2 — Organização do espaço industrial

- 2.1 — Paisagens industriais e níveis de desenvolvimento.
- 2.2 — Factores de organização do espaço industrial.
- 2.3 — Modelo de Weber.
- 2.4 — Complementaridade na actividade industrial.
 - 2.4.1 — Áreas de produção.
 - 2.4.2 — Áreas de consumo.
 - 2.4.3 — Grandes fluxos.

3 — Organização do espaço urbano

- 3.1 — Factores de organização do espaço urbano.
- 3.2 — Modelos de organização do espaço nas cidades.
- 3.3 — A cidade, foco organizador do espaço.
 - 3.3.1 — Hierarquia dos lugares centrais.
 - 3.3.2 — Teoria de Cristaller.

INDICAÇÕES BIBLIOGRÁFICAS

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INDICAÇÕES BIBLIOGRÁFICAS

- C — O Homem criador de espaço organizado. A explosão demográfica e os grandes problemas do Mundo actual**
- 1 — Crescimento demográfico e alimentação.
 1.1 — Fome e subalimentação.
 1.2 — Quantidade e qualidade da alimentação.
- 2 — Crescimento demográfico e utilização dos recursos.
 2.1 — Recursos renováveis.
 2.2 — Recursos não renováveis.
- 3 — Crescimento demográfico e desenvolvimento.
 3.1 — Indicadores do nível de desenvolvimento.
 3.2 — Países ricos e países pobres.
- 4 — Crescimento demográfico e expansão urbana.
 4.1 — A cidade e os seus níveis de dependência.
 4.2 — Situações de ruptura.
- 5 — Crescimento demográfico e poluição — O Homem e a Natureza, um equilíbrio frágil e ameaçado.
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OBJECTIVOS ESPECÍFICOS

A. INTRODUÇÃO

1. A Geografia no contexto das Ciências

- Descrever sucintamente o método científico.
- Dar uma noção de objecto de uma Ciência.
- Referir o critério que leva à distinção tradicional entre Ciências da Terra e Ciências Humanas.
- Indicar a razão porque o objecto não é suficiente para distinguir entre si as várias Ciências Humanas.
- Indicar a base a que se pode recorrer para fazer a distinção entre as várias ciências.
- Indicar as questões que dão à Geografia a sua originalidade e coesão.
- Problematicar a noção de Geografia.
- Referir a posição da Geografia em relação às outras ciências.
- Dar exemplos de ciências a que possam interessar os seguintes fenómenos:
 - Uma desordem urbana
 - A natureza da ocupação do espaço agrícola em redor da cidade
 - A localização de um importante complexo industrial
- Indicar para cada um dos fenómenos anteriores um aspecto que possa interessar directamente ao trabalho do geógrafo.

2. Grandes correntes da Geografia

- Indicar o processo utilizado por Eratóstenes para localizar satisfatoriamente os lugares na superfície terrestre.
- Descrever a contribuição de Ptolomeu para o processo de localização dos lugares na superfície terrestre.

- Explicar o importante impulso dado à Geografia por Estrabão na localização absoluta e descrição dos lugares.
- Justificar o retrocesso da Geografia verificado na Idade Média.
- Justificar o desenvolvimento da Geografia europeia no período das grandes explorações e descobrimentos.
- Descrever a contribuição decisiva que Humboldt e Ritter tiveram para o desenvolvimento da Geografia Moderna.
- Relacionar as perspectivas de Humboldt e Ritter com os dois ramos principais da Geografia Moderna.
- Caracterizar a Geografia Geral.
- Caracterizar a Geografia Regional.
- Descrever os conceitos novos de espaço e distância que caracterizam a tendência locacional ou locativa da Geografia actual.
- Indicar uma vantagem e um inconveniente da análise quantitativa em Geografia.

3. Conceitos básicos da análise geográfica

- Definir escala de um mapa.
- Calcular a distância real entre dois pontos a partir de uma escala numérica ou de uma escala gráfica.
- Escolher a escala apropriada para representar cartograficamente um espaço de grandes dimensões (caso da superfície da Terra na sua globalidade).
- Escolher, em face de situações concretas, escalas cartográficas apropriadas para representar fenómenos que requerem níveis de análise muito diferentes, tais como:
 - uma aldeia africana
 - a região onde se encontra essa aldeia
 - o país em que se inscreve essa região
 - o conjunto dos países do Terceiro Mundo.
- Referir os limites máximo e mínimo das dimensões do espaço investigado pelo geógrafo.
- Referir a diferença quantitativa entre o conjunto de fenómenos susceptíveis de serem observados numa dada área e o conjunto dos fenómenos susceptíveis de serem observados numa área menor, mas contida na anterior.

- Referir a diferença entre o grau de pormenor capaz de ser observado numa área determinada e o grau de pormenor capaz de ser observado numa área menor, mas contida na anterior.
- Distinguir localização absoluta de localização relativa.
- Dar dois exemplos de processos de localização absoluta.
- Ler as coordenadas geográficas em redes cartográficas.
- Localizar pontos pelas coordenadas geográficas.
- Distinguir distância absoluta de distância relativa.
- Dar exemplos de dois tipos de distância relativa.
- Definir linhas isócronas.
- Definir linhas isotimas.
- Dar uma noção geral de isolinhas.
- Traçar isócronas em torno de um ponto central ou foco.
- Traçar isotimas em torno de um ponto central ou foco.
- Interpretar mapas de isócronas.
- Interpretar mapas de isotimas.
- Dar uma noção de acessibilidade.
- Dar uma noção de mapa distorcido.
- Interpretar mapas distorcidos.
- Cartografar três pontos num espaço não absoluto.
- Elaborar matrizes representativas das interações espaciais de um conjunto de quatro ou mais elementos.
- Interpretar matrizes representativas das interações espaciais de um conjunto de quatro ou mais elementos.
- Dar uma noção de efeito de barreira.
- Dar uma noção de amostra.
- Referir a vantagem da utilização de amostras.
- Referir três métodos de amostragem.
- Descrever o método de amostragem sistemática.
- Aplicar o método de amostragem sistemática.
- Descrever o método de amostragem casual ou aleatória.
- Aplicar o método de amostragem casual ou aleatória.
- Descrever o método de amostragem estratificada.
- Aplicar o método de amostragem estratificada.
- Justificar a necessidade de apresentar os dados estatísticos sob a forma devidamente elaborada.
- Elaborar diagramas de dispersão.
- Interpretar diagramas de dispersão.
- Individualizar grupos naturais ou classes nos diagramas de dispersão.
- Elaborar quadros de frequência.
- Interpretar quadros de frequência.
- Apresentar a informação dos quadros de frequência sob a forma de histogramas.
- Interpretar histogramas.
- Elaborar curvas de frequência.
- Determinar a moda (ou modas) de qualquer curva de frequência.
- Calcular a média de qualquer curva de frequência.
- Classificar as curvas de frequência quanto ao número de modas.
- Comparar curvas de frequência.
- Caracterizar a curva dita normal ou de Gauss.
- Calcular a mediana de qualquer curva de frequência.
- Elaborar gráficos triangulares.
- Interpretar gráficos triangulares.
- Elaborar gráficos cumulativos.
- Interpretar gráficos cumulativos.
- Utilizar papel semilogarítmico e logarítmico.
- Desenhar mapas com simbologia em cores e em texturas.
- Interpretar mapas com simbologia em cores e em texturas.
- Desenhar mapas de pontos.
- Interpretar mapas de pontos.
- Desenhar mapas de isolinhas.
- Interpretar mapas de isolinhas.
- Desenhar mapas de fluxos.

- Interpretar mapas de fluxos.
 - Desenhar mapas com símbolos de áreas proporcionais.
 - Interpretar mapas com símbolos de áreas proporcionais.
 - Elaborar diagramas angulares ou sectorogramas.
 - Interpretar diagramas angulares ou sectorogramas.
 - Interpretar mapas com símbolos volumétricos.
- B. Reflexos da actividade produtiva na organização do espaço.**
- 1. Organização do espaço agrário.**
- Discutir o conceito de agricultura.
 - Referir a importância da agricultura na economia mundial.
 - Caracterizar as grandes etapas do desenvolvimento da agricultura.
 - Discutir o conceito de espaço agrário.
 - Distinguir Geografia Rural de Geografia Agrária.
 - Distinguir paisagem agrária de paisagem rural.
 - Referir os principais elementos que definem o espaço agrário.
 - Definir morfologia agrária.
 - Indicar os principais elementos que constituem a morfologia agrária.
 - Indicar os principais tipos de paisagens agrárias na região temperada.
 - Indicar os principais tipos de paisagens agrárias nas regiões tropicais.
 - Caracterizar os principais tipos de paisagens agrárias nas regiões temperadas.
 - Caracterizar os principais tipos de paisagens agrárias nas regiões tropicais.
 - Definir estrutura agrária.
 - Dar uma noção de sistema de exploração agrícola.
 - Estabelecer as diferenças entre:
 - parcela agrícola
 - exploração agrícola
 - propriedade agrícola
- Distinguir agricultura de regadio de agricultura de sequeiro.
 - Distinguir rega de abundância de rega de carência.
 - Distinguir agricultura intensiva de agricultura extensiva.
 - Distinguir monocultura de policultura.
 - Dar uma noção de rotação de culturas.
 - Justificar a necessidade da prática de rotações.
 - Caracterizar a agricultura de subsistência.
 - Estabelecer a diferença entre agricultura de subsistência e agricultura de mercado.
 - Indicar vários tipos de agricultura de subsistência.
 - Indicar vários tipos de agricultura de mercado.
 - Caracterizar a agricultura científica e mecanizada.
 - Dar uma noção de capacidade de uso do solo.
 - Definir sistema de cultura.
 - Relacionar os sistemas de agricultura com os principais tipos de povoamento.
 - Indicar os principais sistemas de cultura das regiões tropicais e temperadas.
 - Caracterizar os diferentes sistemas de cultura das regiões tropicais.
 - Caracterizar os diferentes sistemas de cultura das regiões temperadas.
 - Relacionar as características das paisagens agrárias com as técnicas utilizadas.
 - Distinguir sistemas agrários com diferentes níveis de desenvolvimento.
 - Relacionar esses sistemas com as paisagens que lhes correspondem.
 - Referir algumas consequências económicas da prática de vários sistemas agrários.
 - Referir algumas consequências ecológicas da prática de vários sistemas agrários.
 - Referir os principais factores físicos que condicionam a organização do espaço agrário.
 - Explicar o modo como o ritmo anual das temperaturas influi na localização das produções agrícolas.
 - Descrever o modo como a luz solar influi na localização das produções agrícolas.

- Explicar o modo como o ritmo anual das chuvas influi na localização das produções agrícolas.
- Explicar o modo como a combinação dos factores temperatura e precipitação atmosférica influi na localização das produções agrícolas.
- Explicar o modo como o vento influi na localização das produções agrícolas.
- Explicar o modo com influem na localização das produções agrícolas outros factores como:
 - a humidade
 - o orvalho
 - a geada.
- Indicar a importância dos factores climáticos na zonalidade da produção agrícola.
- Explicar o modo como a qualidade dos solos influi na localização das produções agrícolas.
- Relacionar a evolução dos solos das regiões tropicais com as condições climáticas.
- Relacionar a evolução dos solos das regiões temperadas com as condições climáticas.
- Explicar a zonalidade da produção agrícola.
- Descrever o modo como o relevo actua sobre a localização das produções agrícolas.
- Referir os principais factores humanos que condicionam a organização do espaço agrário.
- Descrever técnicas utilizadas pelo homem para combater a adversidade de factores físicos tais como:
 - Temperatura (uma técnica)
 - Precipitação (uma técnica)
 - Geada (uma técnica)
 - Solos (duas técnicas).
- Relacionar a pressão demográfica com as características da agricultura.
- Explicar a influência que a quantidade e a qualidade da mão-de-obra têm sobre a localização das produções agrícolas.

- Descrever o modo como o factor distância-tempo condiciona a utilização do espaço nas explorações agrícolas.
- Explicar o papel que a informação, disponível ao agricultor, tem na escolha de cultivos e animais.
- Relacionar a escolha das produções, feita pelo agricultor, com a procura existente no mercado.
- Indicar formas de intervenção dos governos, capazes de condicionarem as decisões dos agricultores quanto à escolha das suas produções agrícolas.
- Explicar a influência que o factor distância ao mercado (distância-custo) tem sobre a localização dos produtos agrícolas.
- Referir os princípios em que se baseia a teoria de Van Thünen.
- Construir um modelo da utilização do espaço agrário em torno de uma cidade central (mercado).
- Dar exemplos de deformações introduzidas no modelo circular.
- Justificar o padrão da ocupação do solo agrícola descrito por Van Thünen na teoria do Isolated State.

2. Organização do espaço industrial

- Discutir o conceito de indústria.
- Dar uma noção de paisagem industrial.
- Referir os elementos que caracterizam uma paisagem industrial.
- Distinguir as grandes etapas do desenvolvimento industrial.
- Justificar no tempo e no espaço a eclosão da Revolução Industrial.
- Explicar as consequências da Revolução Industrial:
 - na demografia
 - na agricultura
 - nos transportes
 - no desenvolvimento urbano.
- Relacionar as características das paisagens industriais com o nível de desenvolvimento atingido.
- Explicar as transformações observadas nas formas de produção.
- Dar uma noção de:
 - standardização

- Indicar as principais áreas de fornecedores de matérias-primas.
 - Referir os grandes fluxos internacionais de matérias-primas.
 - Mencionar as principais áreas de consumo de matéria-prima.
 - Referir alguns problemas que afectam o transporte de matérias-primas.
 - Indicar os principais fluxos de produtos industriais.
3. Organização do espaço urbano
- Distinguir espaço urbano de espaço rural.
 - Dar uma noção de modo de vida urbano.
 - Indicar diferentes critérios de definição de cidade.
 - Criticar a aplicabilidade de cada um dos critérios vulgarmente utilizados.
 - Referir exemplos que demonstrem as vantagens e desvantagens da utilização dos vários critérios.
 - Dar exemplos que ilustrem a necessidade de utilização de critérios mistos para a definição de cidade.
 - Indicar as principais funções que se podem encontrar nas cidades.
 - Dar uma noção da diferenciação funcional no interior da cidade.
 - Distinguir áreas funcionalmente homogéneas no interior da cidade.
 - Dar uma noção de C.B.D..
 - Dar uma noção da evolução actual do "centro" da cidade.
 - Explicar a evolução do C.B.D. de uma cidade.
 - Relacionar a deslocação do C.B.D. com a evolução da cidade.
 - Distinguir áreas residenciais no interior da cidade.
 - Dar uma noção de subúrbio.
 - Caracterizar quanto às funções e o modo de vida, os subúrbios das cidades.
 - Dar uma noção da diferenciação socioeconómica no interior da cidade.
 - Distinguir diferentes áreas sociais no interior da cidade.
 - Relacionar essas diferenças com:
 - qualidade da habitação
 - equipamento social
 - localização no interior da cidade.
- produção em série
 - trabalho em cadeia.
 - Referir os principais factores de localização das indústrias.
 - Relacionar a localização das indústrias com:
 - mão-de-obra
 - fontes de energia
 - transportes
 - matérias-primas
 - mercados
 - capitais.
 - Referir formas de intervenção dos governos susceptíveis de condicionar o desenvolvimento das paisagens industriais.
 - Localizar as grandes áreas industriais à superfície do Globo.
 - Relacionar as diferentes políticas industriais com os princípios de organização do espaço.
 - Distinguir concentração vertical de concentração horizontal.
 - Referir as principais consequências destas formas de concentração.
 - Dar uma noção de:
 - Monopólio
 - Trust
 - Holding
 - Cartel
 - Multinacional.
 - Referir a influência das multinacionais na economia mundial.
 - Referir os princípios em que se baseia a teoria de Weber.
 - Fazer uma análise crítica do modelo de Weber.
 - Referir as tendências actuais da distribuição espacial das indústrias.
 - Perspectivar os problemas resultantes das grandes concentrações industriais.
 - Perspectivar os problemas resultantes do crescimento da produção industrial.

Em sua substituição sugerem-se os seguintes objectivos gerais que poderão ser atingidos por vias e estratégias diferentes:

- Reconhecer a explosão demográfica como um fenómeno actual e ecuménico.
- Relacionar a explosão demográfica com os múltiplos problemas que afligem o mundo actual.
- Reconhecer que estes problemas interessam a toda a humanidade.
- Reconhecer que a sua solução passa por uma intervenção a nível mundial.

SUGESTÕES DE TRABALHO

- Análise, interpretação e discussão, em grupos, dos textos indicados na bibliografia.
- Organização de palestras com professores do Ensino Superior focando os temas do programa.
- Utilização de filmes e diapositivos que podem ser obtidos no Instituto de Tecnologia Educativa, na Comissão Nacional do Ambiente e nas Embaixadas.
- No estudo do tema B, deve recorrer-se, sempre que possível, a exemplos portugueses e ao intercâmbio de material entre as escolas, principalmente entre as que têm localização geográfica muito diferente.
- Elaboração de estudos e projectos susceptíveis de serem utilizados pelas autarquias locais.

- Relacionar o preço do solo urbano com a sua localização e utilização.
- Dar uma noção da importância do valor do solo urbano na organização interna da cidade.
- Indicar dois modelos interpretativos da organização interna da cidade (Burgess; Hoyt).
- Caracterizar cada um dos modelos atrás indicados.
- Indicar as relações de dependência entre a cidade e o campo.
- Dar uma noção de área de influência de uma cidade.
- Referir critérios susceptíveis de definir área de influência de uma cidade.
- Distinguir funções raras de funções vulgares.
- Distinguir diferentes níveis hierárquicos das funções ligadas ao fornecimento de bens e serviços.
- Distinguir "bem central" de "bem disperso".
- Dar uma noção de lugar central.
- Dar uma noção de função central.
- Relacionar o nível hierárquico de um lugar central com o nível das funções por ele fornecidas.
- Definir uma hierarquia de lugares centrais.
- Relacionar o nível hierárquico das funções concentradas na cidade com a extensão da área a que elas se destinam.
- Dar uma noção de limiar.
- Dar uma noção de raio de eficiência.
- Referir sinteticamente o modelo proposto por Christaller para a organização de uma rede de lugares centrais.
- Referir os princípios em que se baseia a teoria de Christaller.
- Criticar o modelo de Christaller.

C. O Homem criador de espaço organizado

A perspectiva globalizante que se pretende dar ao tema C, é limitativa de definição de objectivos específicos.

APPENDIX D1

Documents Cited in Chapter 6

Document D1.1

Summary of relative merits of interviewing versus questionnaire

Source: Tuckman, 1972

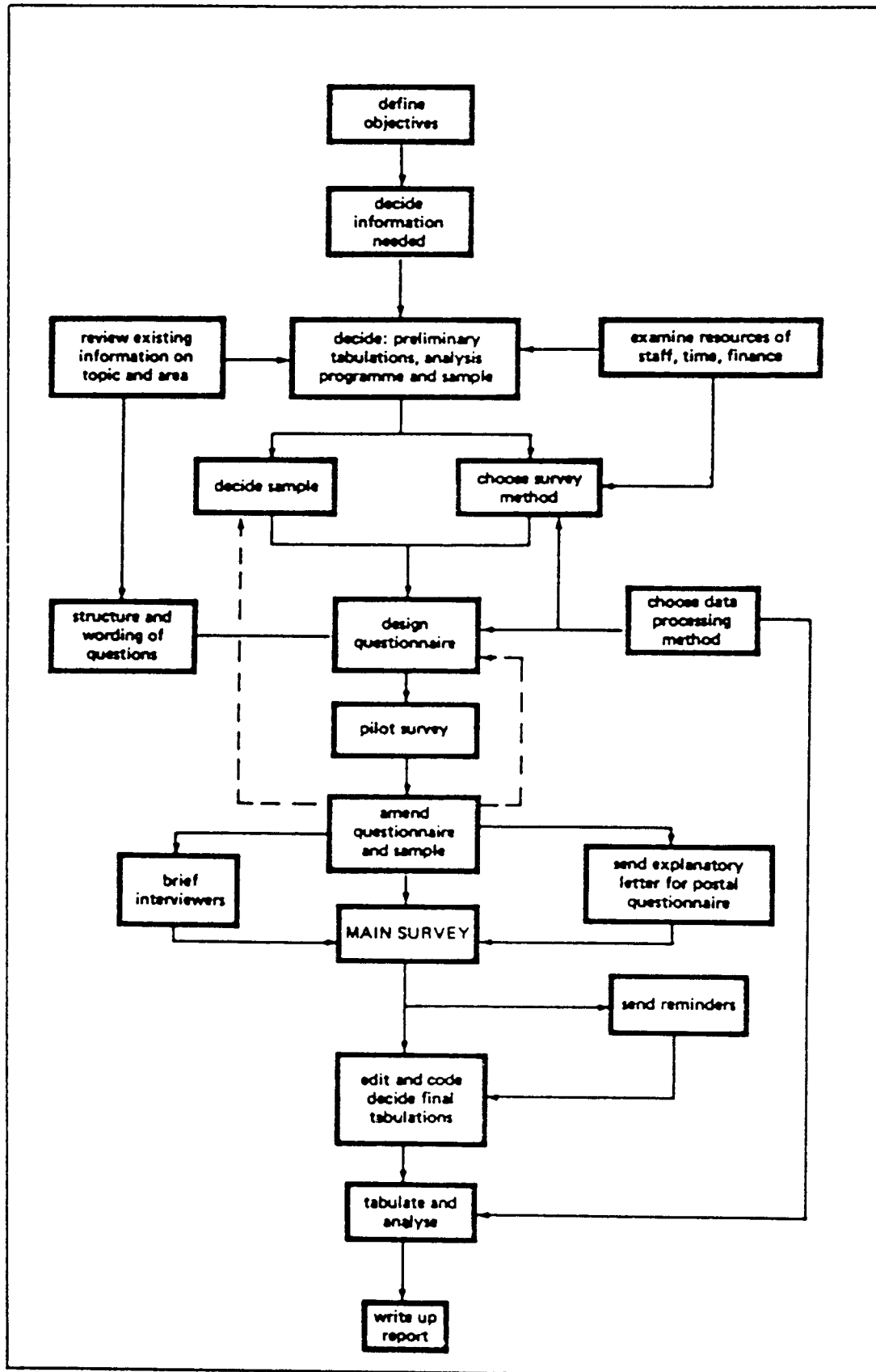
(Cohen and Manion, 1985, 292)

<i>Consideration</i>	<i>Interview</i>	<i>Questionnaire</i>
1. Personal need to collect data	Requires interviewers	Requires a clerk
2. Major expense	Payment to interviewers	Postage and printing
3. Opportunities for response-keying (personalisation)	Extensive	Limited
4. Opportunities for asking	Extensive	Limited
5. Opportunities for probing	Possible	Difficult
6. Relative magnitude of data reduction	Great (because of coding)	Mainly limited to rostering
7. Typically, the number of respondents who can be reached	Limited	Extensive
8. Rate of return	Good	Poor
9. Sources of error	Interviewer, instrument, coding, sample	Limited to instrument and sample
10. Overall reliability	Quite limited	Fair
11. Emphasis on writing skill	Limited	Extensive

Document D1.2Stages in the planning of a survey

Source: adapted from Davidson, 1970

(Cohen and Manion, 1985, 95)



APPENDIX D2

Materials Included in Mailing and Questionnaires

Document D2.1**Pilot questionnaire****Covering letter**

Maria Manuela A. Ferreira
 Rua de Entrecampos, 58 - 3º Esq.
 1700 Lisboa

Exmos. Senhores
 Professores de Geografia da
 Escola Secundária

Lisboa, 18.2.1982

Caros Colegas

Sou professora efectiva de Geografia da Escola Secundária D. Filipa de Lencastre em Lisboa e estou actualmente a frequentar o Instituto de Educação da Universidade de Londres, graças a uma bolsa de estudo que me foi concedida pelo Instituto Nacional de Investigação Científica.

No referido Instituto de Educação estou a elaborar um trabalho de investigação sobre os problemas referentes ao Planeamento e Desenvolvimento Curriculares em Geografia.

Peço a vossa colaboração respondendo ao questionário dirigido aos professores e pedindo a alunos dos 9º e 12º anos que preencham os questionários que lhes são destinados.

Os questionários destinam-se fundamentalmente a identificar os principais problemas que se apresentam aos Professores de Geografia, a coligir opiniões e sugestões sobre o ensino da disciplina e sobre a maneira como poderia ser melhorado.

O questionário destinado aos professores tem duas partes: a primeira parte do questionário (p.1 a 3) destina-se unicamente ao Delegado de Disciplina, atendendo a que inclui perguntas respeitantes à Escola (número total de alunos, número de alunos inscritos em Geografia, existência ou não de uma sala de Geografia, etc.).

A segunda parte (p.4 a 21) destina-se a ser respondida individualmente por todos os professores que ensinam Geografia na Escola (incluindo o Delegado de Disciplina).

Na última página pede-se que façam críticas e sugestões a este questionário, uma vez que se trata de uma primeira versão que deverá ser modificada de acordo com as opiniões emitidas. Posteriormente, a versão definitiva deverá ser enviada a todas as Escolas Secundárias.

Os questionários destinadas a alunos deverão ser preenchidos por alunos de turma(s) do 9º ano de escolaridade e por alunos de turma(s) do 12º ano de escolaridade inscritos na disciplina de Geografia, devendo as turmas ser escolhidas aleatoriamente e os alunos responder individualmente. Um tempo lectivo deverá ser suficiente para os alunos preencherem integralmente o questionário.

Os questionários preenchidos deverão ser entregues ao Delegado de Disciplina que fará o favor de os remeter para a morada indicada.

Agradecendo desde já a vossa colaboração, envio os meus melhores cumprimentos.

A handwritten signature in black ink, appearing to read 'Maria Manuela A. Ferreira'. The signature is fluid and cursive, with the first name 'Maria' and last name 'Ferreira' being more prominent.

(Maria Manuela A. Ferreira)

Document D2.2Pilot teachers' questionnaireQUESTIONÁRIOI - PARTE

Destinada a ser respondida pelo
Professor Delegado de Geografia

Nome da Escola Secundária.....
Morada.....
Localidade.....
Telefone.....

1. Tipo de Escola Secundária

1.1.1. Oficial ☐

1.1.2. Particular ☐

1.2.

1.2.1. Escola Secundária com 7^o, 8^o e 9^o anos ☐

1.2.2. " " " 7^o, 8^o, 9^o, 10^o e 11^o anos ☐

1.2.3. " " " 7^o, 8^o, 9^o, 10^o, 11^o e 12^o anos ☐

1.2.4. " " " 10^o e 12^o anos ☐

1.2.5. Outro tipo - especifique.....

2. Número total de alunos da Escola Secundária

		Número Sexo	
		M	F
2.1. Número de alunos dos 7 ^o , 8 ^o e 9 ^o anos		<input type="text"/>	<input type="text"/>
	Área A	<input type="text"/>	<input type="text"/>
	Área B	<input type="text"/>	<input type="text"/>
2.2. " " " do 10 ^o ano	Área C	<input type="text"/>	<input type="text"/>
	Área D	<input type="text"/>	<input type="text"/>
	Área E	<input type="text"/>	<input type="text"/>
	Área A	<input type="text"/>	<input type="text"/>
	Área B	<input type="text"/>	<input type="text"/>
2.3. " " " " 11 ^o ano	Área C	<input type="text"/>	<input type="text"/>
	Área D	<input type="text"/>	<input type="text"/>
	Área E	<input type="text"/>	<input type="text"/>

		Número Sexo	
		M	F
2.4. Número de alunos do 12º ano	<u>Via de Ensino</u>		
	1º Curso	<input type="text"/>	<input type="text"/>
	2º "	<input type="text"/>	<input type="text"/>
	3º "	<input type="text"/>	<input type="text"/>
	4º "	<input type="text"/>	<input type="text"/>
	5º "	<input type="text"/>	<input type="text"/>
<u>Via Profissionalizante</u>			
Total de alunos		<input type="text"/>	<input type="text"/>

3. Número de alunos inscritos na disciplina de Geografia

		Número Sexo	
		M	F
3.1. Número de alunos dos 10º e 11º anos inscritos em Geografia	Área A - 11º ano	<input type="text"/>	<input type="text"/>
	Área C* $\begin{cases} 10^\circ \text{ ano} \\ 11^\circ \text{ ano} \end{cases}$	<input type="text"/>	<input type="text"/>
	Área D - 10º ou 11º anos	<input type="text"/>	<input type="text"/>
		<input type="text"/>	<input type="text"/>
		<input type="text"/>	<input type="text"/>
3.2. Número de alunos do 12º ano inscritos em Geografia	<u>Via de Ensino</u>		
	1º Curso	<input type="text"/>	<input type="text"/>
	2º "	<input type="text"/>	<input type="text"/>
	3º "	<input type="text"/>	<input type="text"/>
	<u>Via Profissionalizante - Técnico do Ambiente</u>	<input type="text"/>	<input type="text"/>

4. Número de Professores que ensinam Geografia na Escola

4.1. Número de Professores com horário diurno	<input type="text"/>
4.2. " " " " " misto (diurno + noturno)	<input type="text"/>
4.3. " " " " " noturno	<input type="text"/>

* Opção Planejamento e Urbanismo

5. Sala(s) de Geografia

5.1. Número de salas especialmente equipadas para o ensino da Geografia existentes na Escola Secundária

5.2. A(s) sala(s) de Geografia é(são) exclusivamente usada(s) para o ensino da Geografia? Sim Não
☐ ☐

5.3. Se respondeu não a 5.2. calcule a percentagem de ocupação da(s) sala(s) por aulas de Geografia

0 - 19%	20 - 39%	40 - 59%	60 - 79%	+ de 80%
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

5.4. Indique o número de horas de aulas de Geografia dos 7º, 8º e 9º anos que são dadas na(s) referida(s) sala(s)

5.5. Indique o número de horas de aulas de Geografia dos 10º, 11º e 12º anos que são dadas na(s) referida(s) sala(s)

6. Livros de Geografia

Indique quais os livros de Geografia adoptados

	Ano e Área	Autor(es)	Título(s)
6.1.	7º ano		
6.2.	8º ano		
6.3.	9º ano		
6.4.	Área A - 11º ano		
6.5.	Área C - 10º ano		
6.6.	Área C - 11º ano		
6.7.	Área D - 10º ou 11º anos		
6.8.	12º ano 1º, 2º e 3º cursos		
6.9.	12º ano Técnico do Ambiente		

7. Indique qual a quantia que foi atribuída durante o ano lectivo de 1980-1981 para a aquisição de material destinado ao ensino da Geografia

QUESTIONÁRIOII - PARTE

Destinada a ser respondida por todos os Professores que ensinam
Geografia na Escola

Um questionário para cada Professor de Geografia

Nome da Escola Secundária.....

Localidade.....

8. Idade do Professor(a) ☐
M F

9. Sexo ☐ ☐

Sim Não

10. Delegado(a) de Geografia ☐ ☐

11.1. Habilitações académicas
.....
.....

11.2. Habilitações profissionais
.....
.....

12.1. Número de anos de ensino ☐

12.2. Indique há quantos anos ensina Geografia no Ensino Secundário (ano lectivo de 1981-1982 exclusivé) ☐

13.1. Indique o número de horas semanais diurnas de Geografia que lecciona no presente ano lectivo nesta Escola Secundária ☐

13.2. Indique quais os anos e as áreas em que ensina Geografia no presente ano lectivo

7º ano <input type="checkbox"/>	Área A - 11º ano <input type="checkbox"/>	
8º ano <input type="checkbox"/>	Área C $\left\{ \begin{array}{l} 10^\circ \text{ano} \\ 11^\circ \text{ano} \end{array} \right.$	12º ano <input type="checkbox"/>
9º ano <input type="checkbox"/>	Área D - 10º ou 11º anos <input type="checkbox"/>	

13.3. Se no presente ano lectivo lecciona nesta Escola Secundária outra(s) disciplina(s) além de Geografia indique qual(is)
.....

14. Métodos de ensino e de avaliação

Assinale com um / a frequência com que usa os diferentes métodos de ensino ou de avaliação nas aulas de Geografia dos 7º, 8º e 9º anos de escolaridade

	Frequência de Uso					
	Uma ou mais vezes por semana	Uma vez por quinzena	Uma vez por mês	Uma vez por trimestre	Uma vez por ano	Nunca
14.1. O Professor faz uma exposição teórica da lição, os alunos tomam notas						
14.2. O Professor faz uma exposição teórica da lição, os alunos tomam notas, fazem esquemas, elaboram mapas, etc						
14.3. O Professor dialoga com os alunos, os quais tomam notas						
14.4. O Professor dialoga com os alunos, os quais tomam notas, fazem esquemas, elaboram mapas, etc						
14.5. O Professor dita apontamentos						
14.6. O Professor propõe um trabalho individual para ser feito durante a(s) aula(s). A exposição do trabalho é seguida de discussão envolvendo todos os alunos da classe						
14.7. O Professor propõe um trabalho para ser feito por pequenos grupos durante a(s) aula(s). A exposição do trabalho é seguida de discussão envolvendo todos os alunos da classe						
14.8. O Professor propõe um trabalho individual prático (ex. leitura de um mapa, execução de um gráfico, ...), para ser feito durante a aula, seguido de discussão dos resultados obtidos envolvendo todos os alunos da classe						
14.9. O professor propõe um trabalho prático para ser executado por pequenos grupos de alunos durante a aula, seguido de discussão dos resultados obtidos envolvendo todos os alunos da classe.						
14.10. Um aluno prepara um tema em casa que expõe durante a aula. A exposição é seguida de discussão envolvendo todos os alunos da classe						
14.11. Um grupo de alunos prepara um tema em casa. A exposição do trabalho na aula é seguida de discussão envolvendo todos os alunos da classe						

14.

6

Métodos de ensino e de avaliação

Assinale com um / a frequência com que usa os diferentes métodos de ensino ou de avaliação nas aulas de Geografia dos 7^o, 8^o e 9^o anos de escolaridade

	Frequência de Uso					
	Uma ou mais vezes por semana	Uma vez por quinzena	Uma vez por mês	Uma vez por trimestre	Uma vez por ano	Nunca
14.12. O Professor apresenta durante a aula um filme, uma série de diapositivos...; os alunos tomam notas e discutem o que viram						
14.13. O Professor organiza um jogo ou um exercício de simulação de carácter geográfico para toda a classe						
14.14. O Professor propõe que os alunos façam um inquérito fora da Escola, seguido de apuramento e discussão dos resultados obtidos na aula						
14.15. O Professor dá uma prova de avaliação com aviso prévio, não permitindo que os alunos usem livros ou apontamentos durante a prova						
14.16. O Professor dá uma prova de avaliação com aviso prévio, permitindo que os alunos usem livros ou apontamentos durante a aula						
14.17. O Professor dá uma prova de avaliação sem aviso prévio e não permitindo que os alunos usem livros ou apontamentos durante a prova						
14.18. O Professor dá uma prova de avaliação sem aviso prévio, permitindo que os alunos usem livros ou apontamentos durante a prova						
14.19. O Professor dá uma prova de avaliação prática, ex. leitura de um mapa, interpretação de gráficos, etc.						
14.20. Outros métodos de ensino ou de avaliação - especifique.....						

14. Métodos de ensino e de avaliação

Assinale com um / a frequência com que usa os diferentes métodos de ensino ou de avaliação nas aulas de Geografia dos 10º, 11º e 12º anos de escolaridade

	Frequência de Uso					
	Uma ou mais vezes por semana	Uma vez por quinzena	Uma vez por mês	Uma vez por trimestre	Uma vez por ano	Nunca
14.1. O Professor faz uma exposição teórica da lição, os alunos tomam notas						
14.2. O Professor faz uma exposição teórica da lição, os alunos tomam notas, fazem esquemas, elaboram mapas, etc						
14.3. O Professor dialoga com os alunos, os quais tomam notas						
14.4. O Professor dialoga com os alunos, os quais tomam notas, fazem esquemas, elaboram mapas, etc						
14.5. O Professor dita apontamentos						
14.6. O Professor propõe um trabalho individual para ser feito durante a(s) aula(s). A exposição do trabalho é seguida de discussão envolvendo todos os alunos da classe						
14.7. O Professor propõe um trabalho para ser feito por pequenos grupos durante a(s) aula(s). A exposição do trabalho é seguida de discussão envolvendo todos os alunos da classe						
14.8. O Professor propõe um trabalho individual prático (ex. leitura de um mapa, execução de um gráfico, ...), para ser feito durante a aula, seguido de discussão dos resultados obtidos envolvendo todos os alunos da classe						
14.9. O professor propõe um trabalho prático para ser executado por pequenos grupos de alunos durante a aula, seguido de discussão dos resultados obtidos envolvendo todos os alunos da classe.						
14.10. Um aluno prepara um tema em casa que expõe durante a aula. A exposição é seguida de discussão envolvendo todos os alunos da classe						
14.11. Um grupo de alunos prepara um tema em casa. A exposição do trabalho na aula é seguida de discussão envolvendo todos os alunos da classe						

14.

8

Métodos de ensino e de avaliação

Assinale com um / a frequência com que usa os diferentes métodos de ensino ou de avaliação nas aulas de Geografia dos 10^o, 11^o e 12^o anos de escolaridade

	Frequência de Uso					
	Uma ou mais vezes por semana	Uma vez por quinzena	Uma vez por mês	Uma vez por trimestre	Uma vez por ano	Nunca
14.12. O Professor apresenta durante a aula um filme, uma série de diapositivos...; os alunos tomam notas e discutem o que viram						
14.13. O Professor organiza um jogo ou um exercício de simulação de carácter geográfico para toda a classe						
14.14. O Professor propõe que os alunos façam um inquérito fora da Escola, seguido de apuramento e discussão dos resultados obtidos na aula						
14.15. O Professor dá uma prova de avaliação com aviso prévio, não permitindo que os alunos usem livros ou apontamentos durante a prova						
14.16. O Professor dá uma prova de avaliação com aviso prévio, permitindo que os alunos usem livros ou apontamentos durante a aula						
14.17. O Professor dá uma prova de avaliação sem aviso prévio e não permitindo que os alunos usem livros ou apontamentos durante a prova						
14.18. O Professor dá uma prova de avaliação sem aviso prévio, permitindo que os alunos usem livros ou apontamentos durante a prova						
14.19. O Professor dá uma prova de avaliação prática, ex. leitura de um mapa, interpretação de gráficos, etc.						
14.20. Outros métodos de ensino ou de avaliação - especifique.....						

15. Material de ensino

Assinale com um / a frequência com que utiliza os diferentes tipos de equipamento ou materiais de ensino nos 7^o, 8^o e 9^o anos de escolaridade

Se não existem na Escola coloque um X na última coluna

	Frequência de Utilização						Não existe na Escola
	Uma ou mais ve- zes por semana	Uma vez por quinzena	Uma vez por mês	Uma vez por tri- mestre	Uma vez por ano	Nunca	
Equipamento visual e sonoro							
Retroprojector							
Projector de diapositivos							
Epidiascópio							
Projector de filmes de 16 mm							
Projector de filmes de 8 mm							
Receptor T.V.-branco e preto							
Receptor T.V. - cores							
Video							
Circuito interno de T.V.							
Gravador							
Outro equipamento visual e sonoro- - especifique.....							
Mapas, globo e fotografias							
Mapas de grande escala, 1:25000 ou outras escalas							
Mapas de pequena escala							
Mapas geológicos							
Mapas em relevo							
Mapas em transparências							
Mapas policopiados							
Atlas							
Outros mapas - especifique.....							
Globo							
Fotografias aéreas							
Outras fotografias - especifique							

15. Material de ensino (cont.)

Assinale com um / a frequência com que utiliza os diferentes tipos de equipamento ou materiais de ensino nos 7^o, 8^o e 9^o anos de escolaridade

Se não existem na Escola coloque um X na ultima coluna

	Frequência de Utilização						
	Uma ou mais vezes por semana	Uma vez por quinzena	Uma vez por mes	Uma vez por trimestre	Uma vez por ano	Nunca	Não existe na Escola
Equipamento de meteorologia							
Termômetros vários							
Higrômetro							
Pluviômetro							
Barômetro							
Anemômetro							
Helioscópio							
Mapas sinópticos							
Outro equipamento - especifique							
Outro material							
Bússola							
Sismógrafo							
Amostras de minerais e de rochas							
Tabelas de dados estatísticos							
Calculadora							
Outro material - especifique							

15. Material de ensino

Assinale com um / a frequência com que utiliza os diferentes tipos de equipamento ou materiais de ensino nos 10^o, 11^o e 12^o anos de escolaridade.

Se não existem na Escola coloque um X na última coluna

	Frequência de Utilização						Nunca	Não existe na Escola
	Uma ou mais ve- zes por semana	Uma vez por quinzena	Uma vez por mês	Uma vez por tri- mestre	Uma vez por ano			
Equipamento visual e sonoro								
Retroprojector								
Projector de diapositivos								
Epidiascópio								
Projector de filmes de 16 mm								
Projector de filmes de 8 mm								
Receptor T.V.-branco e preto								
Receptor T.V. - cores								
Video								
Circuito interno de T.V.								
Gravador								
Outro equipamento visual e sonoro- - especifique.....								
Mapas, globo e fotografias								
Mapas de grande escala, 1:25000 ou outras escalas								
Mapas de pequena escala								
Mapas geológicos								
Mapas em relevo								
Mapas em transparências								
Mapas policopiados								
Atlas								
Outros mapas - especifique.....								
Globo								
Fotografias aéreas								
Outras fotografias - especifique								

15. Material de ensino (cont.)

Assinale com um / a frequência com que utiliza os diferentes tipos de equipamento ou materiais de ensino nos 10^o, 11^o e 12^o anos de escolaridade

Se não existem na Escola coloque um X na ultima coluna

	Frequência de Utilização						
	Uma ou mais vezes por semana	Uma vez por quinzena	Uma vez por mes	Uma vez por tri-mestre	Uma vez por ano	Nunca	Não existe na Escola
Equipamento de meteorologia							
Termômetros vários							
Higrômetro							
Pluviômetro							
Barômetro							
Anemômetro							
Helioscópio							
Mapas sinópticos							
Outro equipamento - especifique							
Outro material							
Bússola							
Sismógrafo							
Amostras de minerais e de rochas							
Tabelas de dados estatísticos							
Calculadora							
Outro material - especifique							

16. Trabalho de campo, visitas e excursões

13

16.1. Indique se considera estas actividades indispensáveis para o ensino da Geografia

Sim

Não

☐☐

16.2. Indique as razões da resposta dada em 16.1.

.....

.....

.....

16.3. Indique as dificuldades que encontra para a realização destas actividades

.....

.....

.....

16.4. Relativamente ao ano lectivo de 1981-1982 indique quais as actividades que já realizou, assim como o tempo gasto em efectua-las. Se planeia realizar outras actividades durante o corrente ano lectivo indique igualmente quais

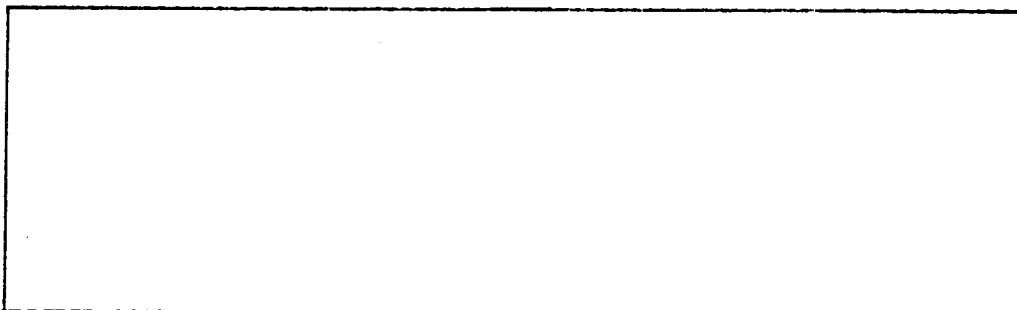
Ano e Área	Actividades realizadas ou planeadas	Tempo
7º ano		
8º ano		
9º ano		
Área A 11º ano		
Área C 10º ano		
Área C 11º ano		
Area D 10º ou 11º anos		
12º ano 1º, 2º e 3º cursos		
12º ano Técnico do Ambiente		

17. Programas

De opiniões e sugestões sobre os actuais programas de Geografia

17.1. 7º, 8º e 9º anos de escolaridade

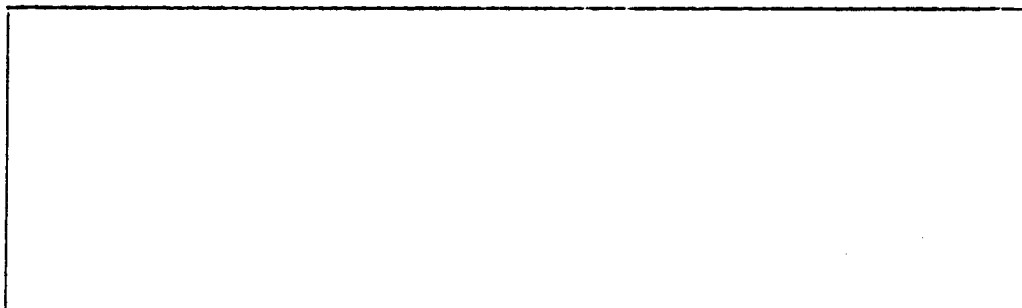
17.1.1. Indique segundo a sua opinião quais são as contribuições específicas da Geografia para a formação dos alunos que justificam a sua inclusão no currículo dos 7º, 8º e 9º anos de escolaridade



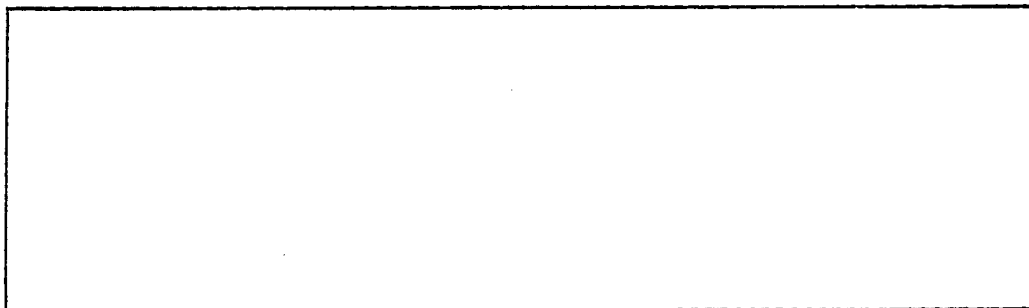
17.1.2. Como sabe os conteúdos gerais dos actuais programas de Geografia são os seguintes:

- 7º ano - Geografia Física
- 8º ano - Geografia de Portugal
- 9º ano - Geografia Humana

Indique as razões porque concorda ou discorda com os conteúdos gerais dos programas e com a sequência adoptada



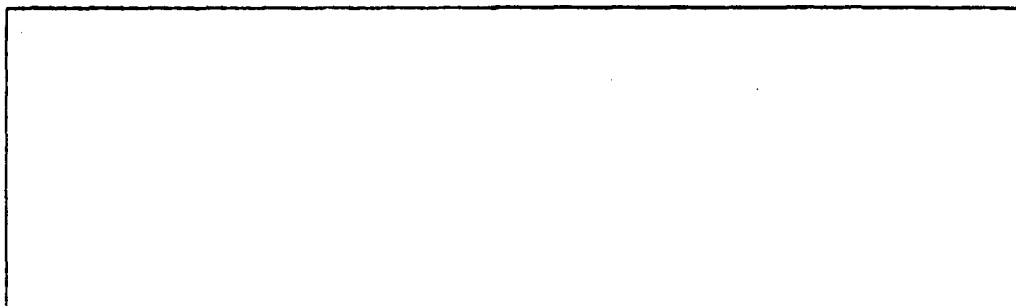
17.1.3. Se discorda com os conteúdos gerais dos programas e/ou com a sequência adoptada sugira outros conteúdos e/ ou outra sequência que julgue serem mais adequados



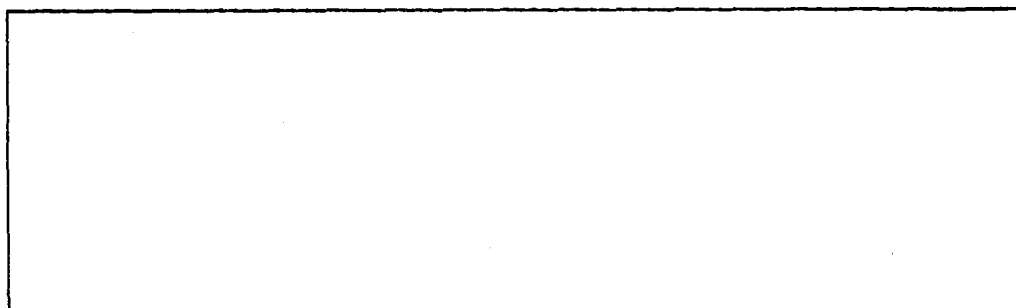
17. Programas

17.1. 7º, 8º e 9º anos de escolaridade (cont.)

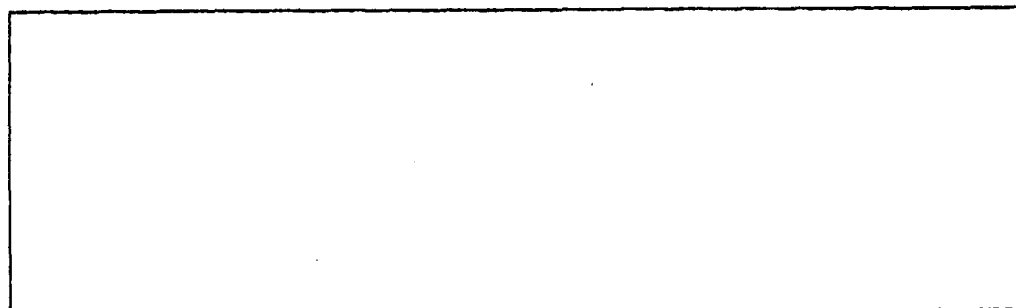
- 17.1.4. Se considera que os programas não incluem as noções de carácter geográfico que considera indispensáveis para a formação dos alunos indique quais as noções que deveriam ser acrescentadas ou pelo contrário eliminadas dos programas



- 17.1.5. Indique quais os principais problemas que lhe surgiram ao ensinar estes programas



- 17.1.6. Sugira inovações que julgue poderem contribuir para a melhoria do ensino da Geografia nos 7º, 8º e 9º anos de escolaridade



17. Programas

17.2. Área A - Estudos Científico-Naturais

11º ano de escolaridade

Como sabe a disciplina de Geografia é opcional para o 11º ano desta área de estudos e o programa é constituído por Geografia Física

17.2.1. Diga se concorda ou discorda que o programa seja unicamente constituído por Geografia Física e indique as razões da sua resposta

17.2.2. Indique os principais problemas que lhe surgiram ao ensinar este programa

17.2.3. Sugira modificações no programa e/ou outras inovações que julgue poderem contribuir para a melhoria do ensino da Geografia nesta área de estudos

17. Programas

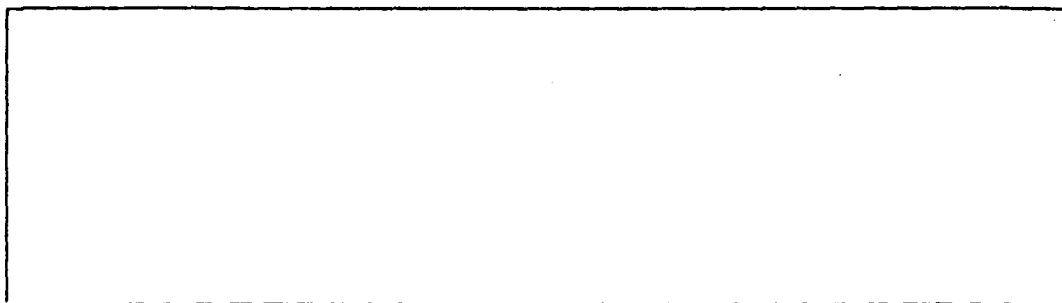
17.3. Área C - Estudos Económico-Sociais

Formação Vocacional - Planeamento e Urbanismo

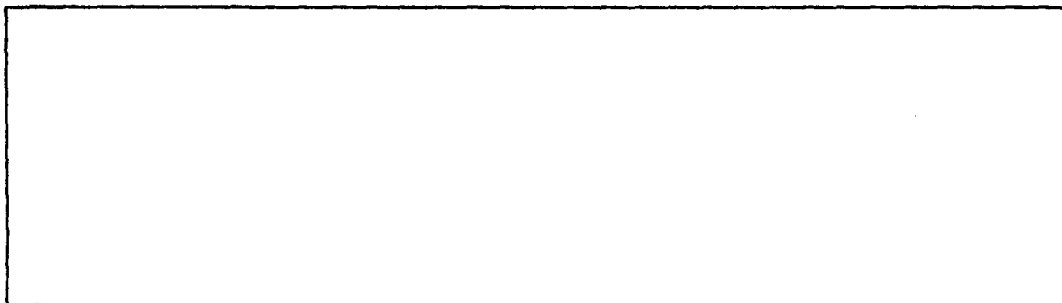
10^o e 11^o anos de escolaridade

Como sabe a disciplina de Geografia faz parte do currículo dos 10^o e 11^o anos da Formação Vocacional Planeamento e Urbanismo e o programa é constituído por Geografia Humana

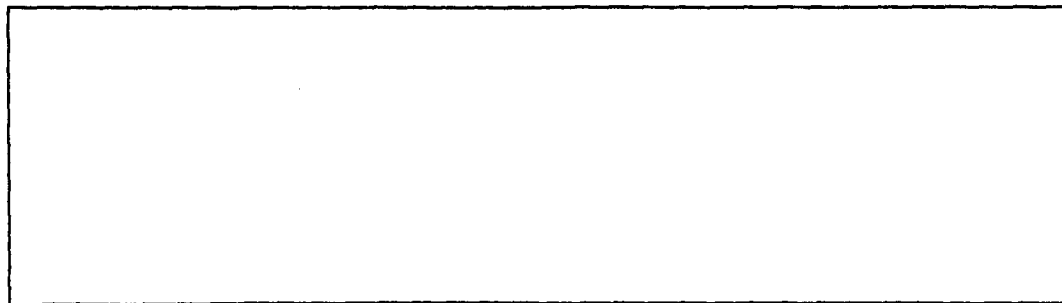
- 17.3.1. Diga se acha que o conteúdo do programa está bem adaptado às necessidades e aos interesses dos alunos desta formação vocacional e indique as razões da sua resposta



- 17.3.2. Indique os principais problemas que lhe surgiram ao ensinar este programa



- 17.3.3. Sugira modificações no programa e/ou outras inovações que julgue poderem contribuir para a melhoria do ensino da Geografia nesta formação vocacional



17. Programas17.4. Área D - Estudos Humanísticos10^o ou 11^o anos de escolaridade

Como sabe a disciplina de Geografia é opcional para o 10^o ou 11^o anos desta área de estudos e o programa é constituído por Geografia Humana

- 17.4.1. Diga se acha que o conteúdo do programa está bem adaptado às necessidades e aos interesses dos alunos desta área de estudos e indique as razões da sua resposta

- 17.4.2. Indique os principais problemas que lhe surgiram ao ensinar este programa

- 17.4.3. Sugira modificações no programa e/ou outras inovações que julgue poderem contribuir para a melhoria do ensino da Geografia nesta área de estudos

17. Programas

17.5. 12^o ano de escolaridade

Via de ensino - 1^o, 2^o e 3^o cursos

Como sabe a disciplina de Geografia é opcional para os 1^o, 2^o e 3^o cursos do 12^o ano de escolaridade

- 17.5.1. Diga se considera que o programa de Geografia está bem adaptado às necessidades e aos interesses dos alunos do 12^o ano e indique as razões da sua respoata

- 17.5.2. Indique os principais problemas que lhe surgiram ao ensinar este programa

- 17.5.3. Sugira modificações no programa e/ou outras inovações que julgue poderem contribuir para a melhoria do ensino da Geografia no 12^o ano de escolaridade

17. Programas

17.6. 12º ano de escolaridade

Via Profissionalizante

Curso:Técnico do Ambiente

Como sabe a disciplina de Geografia faz parte do currículo do Curso de Técnico do Ambiente e o programa é constituído por Geografia Urbana e Rural

- 17.6.1 Diga se considera que o programa de Geografia está bem adaptado às necessidades e aos interesses dos alunos do Curso de Técnico do Ambiente e indique as razões da sua resposta

- 17.6.2. Indique os principais problemas que lhe surgiram ao ensinar este programa

- 17.6.3. Sugira modificações no programa e/ou outras inovações que julgue poderem contribuir para a melhoria do ensino da Geografia no Curso de Técnico do Ambiente

18. Críticas e sugestões relativas a este questionário ou outras

Document D2.3**Pilot 9th year pupils' questionnaire****QUESTIONÁRIO**

1

Destinado aos alunos
do 9º ano de escolaridade

Nome da Escola Secundária.....

Localidade.....

1. DATA DE NASCIMENTO do aluno

Dia	Mês	Ano
<input type="text"/>	<input type="text"/>	<input type="text"/>

2. SEXO (Ponha uma cruz no quadrado apropriado)

Masculino Feminino

☐ ☐

3. ÁREA VOCACIONAL - Indique a área vocacional que frequenta no 9º ano de escolaridade

4. CLASSIFICAÇÕES OBTIDAS - Indique as classificações que obteve no 3º período em Português, Geografia e Matemática nos 7º e 8º anos de escolaridade

Classificações obtidas no 3º período
Português Geografia Matemática

7º ano de escolaridade	_____	<input type="text"/>	<input type="text"/>	<input type="text"/>
8º ano de escolaridade	_____	<input type="text"/>	<input type="text"/>	<input type="text"/>

5. ORDEM DE PREFERÊNCIA DAS DIFERENTES DISCIPLINAS (1 a 11) - Indique a ordem

de preferência que tem pelas diferentes disciplinas colocando o número 1 no quadrado correspondente à disciplina

que prefere, o número 2 no quadrado

correspondente a disciplina que pre-

fere em segundo lugar e assim suces-

sivamente até 11. Deixe em branco o

quadrado correspondente à língua es-

trangeira que não frequenta.

Nota - A disciplina de Religião e

Moral Católicas não foi incluída por

ser facultativa.

Português	<input type="text"/>
Francês	<input type="text"/>
Inglês	<input type="text"/>
Alemão	<input type="text"/>
Matemática	<input type="text"/>
História	<input type="text"/>
Geografia	<input type="text"/>
Biologia	<input type="text"/>
C. Físico-Químicas	<input type="text"/>
Desenho	<input type="text"/>
Área Vocacional	<input type="text"/>
Educação Física	<input type="text"/>

6. GEOGRAFIA

6.1. Se incluiu a disciplina de Geografia entre as seis primeiras disciplinas que indicou por ordem de preferência, assinale com uma cruz as três principais razões que o(a) levaram a colocá-la entre as disciplinas que relativamente mais lhe agradam

(a) A disciplina de Geografia dá-me os conhecimentos necessários para poder orientar-me através da utilização da bússola e para localizar a minha Escola, a localidade onde vivo, Portugal, etc., através do uso de plantas e de mapas ☐

(b) A disciplina de Geografia permite-me adquirir conhecimentos sobre os aspectos físicos do Globo (relevo, clima, vegetação,...) ☐

(c) A disciplina de Geografia permite-me adquirir conhecimentos sobre os aspectos humanos do Globo (população, actividades económicas,...) ☐

(d) A disciplina de Geografia ajuda-me a compreender os principais problemas sociais e económicos do Mundo actual e as possíveis soluções para os resolver ☐

(e) A disciplina de Geografia fornece-me conhecimentos que me serão úteis no futuro ☐

(f) Nas aulas de Geografia o Professor organiza actividades variadas: trabalhos de grupo, trabalhos individuais, leitura de mapas, execução de gráficos, etc. ☐

(g) Nas aulas de Geografia o Professor usa diferentes meios audiovisuais: projector de diapositivos, projector de filmes, retro-projector, etc. ☐

(h) A disciplina de Geografia é fácil ☐

6.2. Se incluiu a disciplina de Geografia entre as cinco últimas disciplinas que indicou por ordem de preferência, assinale com uma cruz as três principais razões que o(a) levaram a colocá-la entre as disciplinas que relativamente menos lhe agradam

(a) Não gosto do estudo dos aspectos físicos do Globo terrestre (relevo, clima, vegetação, etc.) ☐

(b) Não gosto do estudo da Geografia Humana (população, características e distribuição espacial das principais actividades económicas e dos centros urbanos, etc.) ☐

(c) A disciplina de Geografia não me ajuda a compreender os problemas sociais e económicos do Mundo actual e as possíveis soluções para os resolver ☐

(d) A disciplina de Geografia não me fornece conhecimentos que me serão úteis no futuro ☐

(e) As aulas de Geografia são monótonas porque o Professor não organiza actividades variadas : trabalhos de grupo, trabalhos individuais, leitura de mapas, execução de gráficos, etc. ☐

(f) As aulas de Geografia são pouco interessantes porque o Professor não usa diferentes meios audio-visuais : projector de diapositivos, projector de filmes, retroprojector, etc. ☐

(g) A disciplina de Geografia é difícil ☐

(h) A matéria de Geografia é toda para decorar ☐

6.3. Indique se o estudo dos seguintes aspectos da Geografia lhe agrada,

lhe é indiferente ou lhe desagrade (Ponha uma cruz no rectângulo apropriado)

	Agrada-me	É-me Indiferente	Desagrada-me
<u>Geografia Física</u>			
6.3.1. Estudo do relevo			
6.3.2. " " clima			
6.3.3. " " vegetação			
<u>Geografia Humana/Económica</u>			
6.3.4. Estudo da população			
6.3.5. " " actividade agrícola			
6.3.6. " " " industrial			
6.3.7. " " " comercial e dos transportes			
6.3.8. Estudo dos aglomerados populacionais			
6.3.9. Estudo do desenvolvimento económico			
<u>Geografia Regional</u>			
6.3.10. Estudo de grandes regiões ou continentes			
6.3.11. Estudo de Portugal Continental e Insular			
6.3.12. Estudo de outros países			
6.3.13. Estudo da região onde está situada a Escola			
6.3.14. <u>Leitura e interpretação de mapas</u>			
6.3.15. <u>Leitura e execução de gráficos</u>			

7. Dê uma definição de Geografia

5

8. Faça observações e sugestões sobre a disciplina de GEOGRAFIA

Document D2.4**Pilot 12th year students' questionnaire****QUESTIONÁRIO**

1

Destinado aos alunos
do 12^o ano de escolaridade
que frequentam a disciplina de Geografia

Nome da Escola Secundária

Localidade

1. DATA DE NASCIMENTO

Dia Mês Ano

2. SEXO

M F
☐ ☐

3. ÁREAS DE ESTUDO

3.1. Indique a área vocacional que frequentou no 9^o ano de escolaridade

9^o ano de escolaridade
área vocacional

3.2. Indique a área de estudo e a formação vocacional que frequentou nos 10^o e 11^o anos

de escolaridade	Área de Estudo	Formação Vocacional
10 ^o ano —	<input type="text"/>	<input type="text"/>
11 ^o ano —	<input type="text"/>	<input type="text"/>

3.3. Indique a via de estudo e o curso que frequenta actualmente no 12^o ano de esco-

laridade	Via de Estudo	Curso
12 ^o ano —	<input type="text"/>	<input type="text"/>

3.4. Indique quais as disciplinas que frequenta no 12^o ano de escolaridade

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

3.5. Indique se frequentou a disciplina de Geografia nos 9^o, 10^o e 11^o anos de escolaridade e a classificação que obteve no 3^o período em Geografia em cada um

dos referidos anos	Frequentou a disciplina de Geografia		Classificação obtida no 3 ^o período em Geografia
	Sim	Não	

9 ^o ano —	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 ^o ano —	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 ^o ano —	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.6. Indique as classificações que obteve no 3º período em Português e Filosofia nos 10º e 11º anos de escolaridade

2

	Português	Filosofia
10º ano de escolaridade	<input type="checkbox"/>	<input type="checkbox"/>
11º ano de escolaridade	<input type="checkbox"/>	<input type="checkbox"/>

4.1. Razões que o (a) levaram a inscrever-se em Geografia no 12º ano de escolaridade

Estão abaixo indicadas algumas razões que o (a) podem ter levado a inscrever-se em Geografia. Indique, pondo uma cruz no quadrado apropriado, a importância que teve para si cada uma delas

Sem importância	De pequena importância	Importante	Muito importante	De fundamental importância
4.1.1. Gostei de estudar Geografia nos anos anteriores				
4.1.2. Estou interessado em aprofundar os meus conhecimentos de Geografia Física				
4.1.3. A Geografia ajuda-me a compreender os problemas referentes à Conservação do Ambiente				
4.1.4. Estou interessado em aprofundar os meus conhecimentos de Geografia Humana				
4.1.5. A Geografia ajuda-me a compreender os problemas socio-económicos portugueses				
4.1.6. A Geografia ajuda-me a compreender os problemas socio-económicos do Mundo actual				
4.1.7. Obtive bons resultados em Geografia nos anos anteriores				
4.1.8. Quero estudar Geografia na Universidade				
4.1.9. Julgo que os conhecimentos de Geografia me serão úteis para a minha futura vida profissional				
4.1.10. Julgo que os conhecimentos de Geografia me serão úteis para a vida prática				
4.1.11. A disciplina de Geografia combina bem com as outras disciplinas em que estou inscrito				

4

4.1- Razões que o (a) levaram a inscrever-se em Geografia no 12º ano de escolaridade (cont.)

Estão abaixo indicadas algumas razões que o (a) podem ter levado a inscrever-se em Geografia. Indique, pondo uma cruz no quadrado apropriado; a importância que teve para si cada uma delas:

	Sem importância	De pequena importância	Importante	Muito importante	De fundamental importância
4.1.12. O Conselheiro de Orientação aconselhou a inscrever-me em Geografia					
4.1.13. O meu Professor de Geografia do 11º ano aconselhou a inscrever-me em Geografia					
4.1.14. Os meus Pais ou um amigo aconselharam a inscrever-me em Geografia					
4.1.15. A disciplina de Geografia era a única que se adaptava bem ao meu horário					
4.1.16. A Geografia é uma disciplina fácil					
4.1.17. Os meus amigos também se inscreveram em Geografia					
4.1.18. Outra (s) razões - indique qual (is)					

4.2. Indique qual o interesse que tem pelo estudo das diferentes partes da Geografia

	Muito Interes-se	Bastante Interes-se	Pouco Interes-se	Nenhum Interes-se
<u>Geografia Física</u>				
4.2.1. Geomorfologia				
4.2.2. Climatologia				
4.2.3. Meteorologia				
4.2.4. Biogeografia				
<u>Geografia Humana / Económica</u>				
4.2.5. Geografia da População				
4.2.6. " Rural				
4.2.7. " Industrial				
4.2.8. " do Comércio e dos Transportes				
4.2.9. " Urbana				
4.2.10. " do Desenvolvimento Económico				
<u>Geografia Regional</u>				
4.2.11. Estudo de grandes regiões ou continentes				
4.2.12. Estudo de Portugal Continental e Insular				
4.2.13. Estudo de outros países				
4.2.14. Estudo da Região onde esta situada a Escola				
4.2.15. <u>Leitura e interpretação de mapas</u>				
4.2.16. <u>Leitura e execução de gráficos</u>				
4.2.17. <u>Trabalho de campo</u>				
4.2.18. Outra(s)- Indique qual (is)				

5. Dê uma definição de Geografia

6

--

6.1. Dê a sua opinião sobre a maneira como o estudo da Geografia nos 7^o, 8^o e 9^o anos poderia ser melhorado

--

6.2. Dê a sua opinião sobre a maneira como o estudo da Geografia nos 10^o, 11^o e 12^o anos de escolaridade poderia ser melhorado

--

6.3. Dê a sua opinião sobre a importância dos conhecimentos adquiridos nas aulas de Geografia para a vida prática

Sem importância	De pequena importância	Importantes	De grande importância	De fundamental importância

6.4. Explique resumidamente a resposta anterior

--

6.5. Indique segundo a sua opinião quais deviam ser os principais contributos da Geografia para a Educação dos jovens

7

--

7. Planos futuros

7.1. Indique o que planeia fazer após a conclusão do 12º ano de escolaridade

Frequentar a Universidade ☐

Frequentar um Curso Médio ☐

Procurar um emprego ☐

7.2. Se planeia continuar a estudar indique por ordem decrescente de preferência os cursos que gostaria de frequentar

1ª preferência

2ª preferência

3ª preferência

7.3. Se não tenciona continuar a estudar indique por ordem decrescente de preferência os ramos de actividade que mais lhe interessam

1ª preferência

2ª preferência

3ª preferência

8. Outras opiniões ou sugestões sobre a disciplina ou sobre o ensino da Geografia

--

Document D2.5Teachers' questionnaire
Covering letter

MINISTÉRIO DA EDUCAÇÃO E DAS UNIVERSIDADES
DIRECÇÃO-GERAL DO ENSINO SECUNDÁRIO

Exm^a Senhor
Presidente do Conselho Directivo
da Escola Secundária _____

OFÍCIO-CIRCULAR Nº 110/83
Pº 1ºD/PM/2/23
Lisboa, 3 de Junho de 1983

ASSUNTO: GEOGRAFIA - INQUÉRITOS

1. Por despacho de 31.5.83, da Exm^a. Senhora Directora-Geral, foi autoriza do o lançamento nas Escolas do inquérito que se junta em anexo, organizado pela professora Dr^a. Maria Manuela Aurélio Ferreira, no âmbito de um conjunto de actividades de investigação em que se encontra empenhada.
2. Os questionários destinados aos PROFESSORES constam de duas partes:
 - A 1ª parte (pp 2 e 3) é para ser respondida, exclusivamente, pelo DELEGADO.
 - A 2ª parte (pp 4 a 13) é para ser respondida, individualmente, por cada um dos PROFESSORES da disciplina, incluindo o próprio DELEGADO.
3. Solicito a V. Ex^a. que empreenda as diligências necessárias no sentido de que todos os inquéritos - de PROFESSORES e de ~~ALUNOS~~ - possam ser en viados a esta Direcção-Geral depois de devidamente preenchidos.

Com os melhores cumprimentos.

A DIRECTORA DE SERVIÇOS,

Document D2.6Teachers' questionnaireFirst reminder letter

Maria Manuela A. Ferreira
Rua de Entrecampos, 58 - 3º Esq.
1700 Lisboa

Exmo(a). Senhor(a)
Presidente do Conselho Directivo da
Escola Secundária
.....

Lisboa, 4.7.1983

Assunto: Geografia - Inquéritos

No âmbito do conjunto de actividades de investigação que tenho vindo a realizar sobre Problemas de Desenvolvimento Curricular em Geografia, fui autorizada por despacho de 31.5.83, da Exma. Senhora Directora-Geral do Ensino Secundário, a lançar questionários dirigidos aos Professores de Geografia, os quais foram enviados no princípio do mês de Junho a todas as Escolas Secundárias.

Não tendo sido recebidos até agora os questionários referentes a essa Escola, venho solicitar a V.Exa. que empreenda as diligências necessárias para que os questionários depois de devidamente preenchidos sejam enviados à Direcção-Geral.

Agradecendo desde já toda a atenção prestada a este assunto, envio os meus melhores cumprimentos.



(Maria Manuela A. Ferreira)

Document D2.7**Teachers' questionnaire****Second reminder letter**

Maria Manuela A. Ferreira
Rua de Entrecampos, 58 - 3º Esq.
1700 Lisboa

Exmo(a). Senhor(a)
Presidente do Conselho Directivo da
Escola Secundária

.....

Lisboa, 24.7.1983

Assunto: Geografia - Inquéritos

No âmbito do conjunto de actividades de investigação que tenho vindo a realizar sobre Problemas de Desenvolvimento Curricular em Geografia, fui autorizada por despacho de 31.5.83, da Exma. Senhora Directora-Geral do Ensino Secundário, a lançar questionários dirigidos aos Professores de Geografia, os quais foram enviados no princípio do mês de Junho a todas as Escolas Secundárias.

Não tendo sido recebidos até agora os questionários referentes a essa Escola, junto em anexo uma cópia do Ofício-Circular nº 110/83 da Direcção-Geral do Ensino Secundário, assim como das 1ª e 2ª partes do questionário, solicitando a V.Exa. que empreenda as diligências necessárias para que os questionários, depois de devidamente preenchidos, sejam enviados à Direcção-Geral.

Agradecendo desde já toda a atenção prestada a este assunto, envio os meus melhores cumprimentos.



(Maria Manuela A. Ferreira)

Document D2.8**Students' questionnaire****Covering letter**

Maria Manuela A. Ferreira
Rua de Entrecampos, 58 - 3º Esq.
1700 Lisboa

Exmo(a). Senhor(a)
Presidente do Conselho Directivo da
Escola Secundária
.....

Lisboa, 8.4.1984

Assunto: Questionários de Geografia

No âmbito do conjunto de actividades de investigação que tenho vindo a realizar sobre Problemas de Desenvolvimento Curricular em Geografia, fui autorizada por despacho de 31.5.83 da Exma. Senhora Directora-Geral do Ensino Secundário, a lançar nas Escolas questionários dirigidos a alunos, que se enviam em anexo.

Os questionários são destinadas a alunos de turma(s) do 9º ano de escolaridade e a alunos de turma(s) do 12º ano de escolaridade inscritos na disciplina de Geografia, devendo as turmas ser escolhidas aleatoriamente e os alunos responder individualmente.

Um tempo lectivo deverá ser suficiente para os alunos preencherem integralmente o questionário.

Solicita-se a V.Exa. que, depois de devidamente preenchidos, mande remeter os questionários para a morada acima indicada.

Agradecendo desde toda a atenção prestada a este assunto, envio os meus melhores cumprimentos.



(Maria Manuela A. Ferreira)

Document D2.9Students' questionnaireReminder letter

Maria Manuela A. Ferreira
Rua de Entrecampos, 58 - 3º Esq.
1700 Lisboa

Exmo(a). Senhor(a)
Presidente do Conselho Directivo da
Escola Secundária

.....

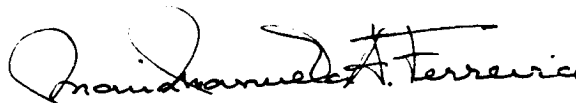
Lisboa, 10.5.1984

Assunto: Questionários de Geografia

No âmbito do conjunto de actividades de investigação que tenho vindo a realizar sobre Problemas de Desenvolvimento Curricular em Geografia, fui autorizada por despacho de 31.5.83, da Exma. Senhora Directora-Geral do Ensino Secundário, a lançar questionários dirigidos a alunos dos 9º e 12º anos de escolaridade, os quais foram enviados a essa Escola em 8.4. 84.

Não tendo recebido até agora os referidos questionários, venho solicitar a V.Exa. que empreenda as diligências necessárias para que os questionários, depois de devidamente preenchidos, sejam enviados para a morada acima indicada.

Agradecendo desde já toda a atenção prestada a este assunto, envio os meus melhores cumprimentos.



(Maria Manuela A. Ferreira)

Document D2.10**Teachers' questionnaire**

2

QUESTIONÁRIO1ª Parte

Destina-se a ser respondida pelo

Professor Delegado de Geografia

Nome da Escola Secundária.....

Morada.....

Localidade..... Telefone.....

1. Tipo de Escola Secundária1.1. Oficial ☐Particular ☐

Anos

7º

8º

9º

10º

11º

12º

1.2. Escola Secundária com ☐ ☐ ☐ ☐ ☐ ☐

Outro tipo (especifique).....

2. Número de alunos inscritos em GeografiaNúmero
Sexo

Área A - 11º ano

Área C+ 10º ano

2.1. Número de alunos dos 10º e 11º

Área C+ 11º ano

anos inscritos em Geografia

Área D - 10º ou 11º

anos

Via de Ensino

1º Curso

2.2. Número de alunos do 12º ano

2º "

inscritos em Geografia

3º "

Via Profissionalizante - Técnico

do Ambiente

+ Opção Planeamento e Urbanismo

3. Número de Professores que ensinam Geografia na Escola3.1. Número de Professores com horário diurno " " " " " misto (diurno + nocturno) " " " " " nocturno 3.2. Número de Professores Profissionalizados " " " em Formação em Exercício " " " com Habilitação Própria (sem Formação
em Exercício) " " " com Habilitação Suficiente

Sim

Não

4. Existe na Escola Delegado Pedagógico de Geografia? 5. Sala de Geografia

5.1. Número de salas especialmente equipadas para o ensino da

Geografia existentes na Escola Secundária

5.2. A sala(s) de Geografia é(são) exclusivamente usada(s)

Sim

Não

para o ensino da Geografia? 5.3. Se respondeu não a 5.2. calcule a percentagem de ocupação da(s) sala(s) por
aulas de Geografia

0-19%	20-39%	40-59%	60-79%	+ de 80%
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

5.4. Indique o número semanal de horas de Geografia dos 7^o, 8^o e 9^o anos
que são dadas na(s) referida(s) sala(s) 5.5. Indique o número semanal de horas de Geografia dos 10^o, 11^o e 12^o anos
que são dadas na(s) referida(s) sala(s) 6. Indique qual a quantia que foi atribuída durante o ano lectivo de 1981-1982para a aquisição de material destinado ao ensino da Geografia

Sim

Não

7. Existe na Escola um microcomputador?

QUESTIONÁRIO2ª Parte

Destina-se a ser respondida por todos os Professores
que ensinam Geografia na Escola Secundária

Um questionário para cada Professor de Geografia

Nome da Escola Secundária.....

Localidade.....

8. Idade do(a) Professor(a) ☐

M F

9. Sexo ☐ ☐

Sim Não

10. Delegado(a) de Geografia ☐ ☐

Sim Não

11. Delegado(a) Pedagógico(a) ☐ ☐

12.1. Habilitações académicas

a) Licenciatura em Geografia ☐

b) Bacharelato em Geografia ☐

c) Outra licenciatura ou bacharelato. Indique qual.....

d) Se ainda não concluiu uma licenciatura ou um bacharelato, indique se está
actualmente a frequentar um curso e qual ☐ ☐

Estou Não estou

Curso..... Universidade.....

e) Se não tem uma licenciatura ou um bacharelato em Geografia indique o número
de cadeiras de Geografia que já possui ☐

f) Curso de Ciências Pedagógicas ☐

g) Outras habilitações académicas.....

12.2. Habilitações profissionais

a) Estágio Pedagógico ☐ ou Formação em Exercício ☐

Não

Sim

1º

b) Está actualmente a fazer a Formação em Exercício?

☐

☐

Ano

2º

c) Outras habilitações profissionais.....

13.1. Número de anos de ensino (ano lectivo de 1982-1983 exclusivé) ☐

13.2. Indique há quantos anos ensina Geografia no Ensino Secundário (1982-1983 exclusivé) ☐

14.1. No presente ano lectivo tem nesta Escola Secundária um horário :

diurno ☐ nocturno ☐ misto ☐

14.2. Indique o número de horas semanais diurnas de Geografia que lecciona no presente ano lectivo nesta Escola Secundária ☐

14.3. Indique quais os anos e as áreas em que ensina Geografia no presente ano lectivo nesta Escola Secundária

7º ano <input type="checkbox"/>	Área A - 11º ano <input type="checkbox"/>	12º ano - 1º, 2º ou 3º <input type="checkbox"/>
8º ano <input type="checkbox"/>	Área C $\left\{ \begin{array}{l} 10^\circ \text{ ano} \\ 11^\circ \text{ ano} \end{array} \right.$ <input type="checkbox"/>	Cursos <input type="checkbox"/>
9º ano <input type="checkbox"/>	Área D $\left\{ \begin{array}{l} 10^\circ \text{ ou} \\ 11^\circ \text{ anos} \end{array} \right.$ <input type="checkbox"/>	12º ano - Técnico do Ambiente <input type="checkbox"/>

14.4. Se no presente ano lectivo lecciona nesta Escola Secundária outra(s) disciplina(s) além de Geografia, indique qual(ais).....

15.1. Se já esteve ou está actualmente envolvido(a) numa ou mais acções de desenvolvimento curricular (elaboração de projectos de novos programas, de fichas pedagógicas, de textos de apoio, etc.) ou em acções de reciclagem - indique quais e quando

15.2. Indique se já exerceu em anos lectivos anteriores o cargo de Delegado(a) de Geografia

Sim Não

☐ ☐

15.3. Indique se já exerceu em anos anteriores o cargo de Orientador(a) ou Delegado(a) Pedagógico(a)

Sim Não

☐ ☐

16. Métodos de Ensino e de Avaliação

Assinale com um X a frequência com que usa os diferentes métodos de ensino ou de avaliação nas aulas de Geografia. Dê respostas separadas relativamente aos 7º, 8º e 9º anos de escolaridade e aos 10º, 11º e 12º anos de escolaridade

Nota - No caso de haver situações diferentes relativas aos vários anos dum mesmo curso, poderá assinalar mais de uma coluna em cada linha especificando o ano e a área a que se refere

Frequência de Uso

	Anos	Uma ou mais vezes por semana	Uma vez por quinzena	Uma vez por mês	Uma vez por trimestre	Uma vez por ano	Nunca
a) O Professor faz uma exposição teórica da lição, os alunos tomam notas	7º, 8º e 9º						
	10º, 11º e 12º						
b) O Professor faz uma exposição teórica da lição, os alunos tomam notas, fazem esquemas, elaboram mapas, etc.	7º, 8º e 9º						
	10º, 11º e 12º						
c) O Professor dialoga com os alunos, os quais tomam notas	7º, 8º e 9º						
	10º, 11º e 12º						
d) O Professor dialoga com os alunos, os quais tomam notas, fazem esquemas, elaboram mapas, etc.	7º, 8º e 9º						
	10º, 11º e 12º						
e) O Professor dita apontamentos	7º, 8º e 9º						
	10º, 11º e 12º						
f) O Professor propõe um trabalho individual para ser feito durante a(s) aula(s). A exposição do trabalho é seguida de discussão envolvendo todos os alunos da classe	7º, 8º e 9º						
	10º, 11º e 12º						
g) O Professor propõe um trabalho para ser feito por pequenos grupos durante a(s) aula(s). A exposição do trabalho é seguida de discussão envolvendo todos os alunos da classe.	7º, 8º e 9º						
	10º, 11º e 12º						
h) O Professor propõe um trabalho individual prático (ex. leitura de um mapa, execução de um gráfico,...) para ser feito durante a aula, seguido de discussão dos resultados obtidos envolvendo todos os alunos da classe	7º, 8º e 9º						
	10º, 11º e 12º						

16. Métodos de Ensino e de Avaliação (continuação)

Frequência de Uso

Anos	Frequência de Uso					
	Uma ou mais vezes por semana	Uma vez por quinzena	Uma vez por mês	Uma vez por trimestre	Uma vez por ano	Nunca
i) O Professor propõe um trabalho prático para ser executado por pequenos grupos durante a(s) aula(s), seguido de discussão dos resultados obtidos envolvendo todos os alunos da classe	7º, 8º e 9º					
	10º, 11º e 12º					
j) Um aluno prepara um tema em casa que expõe durante a aula. A exposição é seguida de discussão envolvendo todos os alunos da classe	7º, 8º e 9º					
	10º, 11º e 12º					
k) Um grupo de alunos prepara um tema em casa. A exposição do trabalho é seguida de discussão envolvendo todos os alunos da classe	7º, 8º e 9º					
	10º, 11º e 12º					
l) O Professor apresenta durante a aula um filme, uma série de diapositivos...; os alunos tomam notas e discutem o que viram	7º, 8º e 9º					
	10º, 11º e 12º					
m) O Professor organiza um jogo ou um exercício de simulação de carácter geográfico para a classe	7º, 8º e 9º					
	10º, 11º e 12º					
n) O Professor propõe que os alunos façam um inquérito fora da Escola, seguido de apuramento e discussão dos resultados obtidos na aula	7º, 8º e 9º					
	10º, 11º e 12º					
o) O Professor dá uma prova de avaliação com aviso prévio, não permitindo que os alunos usem livros ou apontamentos durante a prova	7º, 8º e 9º					
	10º, 11º e 12º					
p) O Professor dá uma prova de avaliação com aviso prévio, permitindo que os alunos usem livros ou apontamentos durante a prova	7º, 8º e 9º					
	10º, 11º e 12º					
q) O Professor dá uma prova de avaliação sem aviso prévio e não permitindo que os alunos usem livros ou apontamentos durante a prova	7º, 8º e 9º					
	10º, 11º e 12º					
r) O Professor dá uma prova de avaliação sem aviso prévio, permitindo que os alunos usem livros ou apontamentos durante a prova	7º, 8º e 9º					
	10º, 11º e 12º					
s) O Professor dá uma prova de avaliação prática, ex. leitura de um mapa, interpretação de gráficos, etc.	7º, 8º e 9º					
	10º, 11º e 12º					
t) Outro(s) método(s) de ensino ou de avaliação - especifique.....	7º, 8º e 9º					
.....	10º, 11º e 12º					
.....						

17. Material de Ensino

Assinale com um X a frequência com que utiliza os diferentes tipos de equipamento ou de material de ensino. Dê respostas separadas relativamente aos 7^o, 8^o e 9^o anos de escolaridade e aos 10^o, 11^o e 12^o anos de escolaridade.

No caso de não existirem na Escola coloque um X na última coluna.

Nota - No caso de haver situações diferentes relativas aos vários anos dum mesmo curso, poderá assinalar mais de uma coluna em cada linha especificando o ano e a área a que se refere

Frequência de Utilização

Anos		Uma ou mais vezes por semana	Uma vez por quin-zena	Uma vez por mês	Uma vez por tri-mestre	Uma vez por ano	Nunca	Não existe na Escola
Equipamento visual e sonoro								
Retroprojector	7º, 8º e 9º							
	10º, 11º e 12º							
Projector de diapositivos	7º, 8º e 9º							
	10º, 11º e 12º							
Epidiascópio	7º, 8º e 9º							
	10º, 11º e 12º							
Projector de filmes de 16 mm	7º, 8º e 9º							
	10º, 11º e 12º							
Projector de filmes de 8 mm	7º, 8º e 9º							
	10º, 11º e 12º							
Receptor T.V.	7º, 8º e 9º							
	10º, 11º e 12º							
Video	7º, 8º e 9º							
	10º, 11º e 12º							
Gravador	7º, 8º e 9º							
	10º, 11º e 12º							
Outro equipamento visual e sonoro - especifique	7º, 8º e 9º							
	10º, 11º e 12º							
Mapas, globo e fotografias								
Plantas	7º, 8º e 9º							
	10º, 11º e 12º							
Mapas topográficos	7º, 8º e 9º							
	10º, 11º e 12º							
Mapas de pequena escala	7º, 8º e 9º							
	10º, 11º e 12º							
Mapas geológicos	7º, 8º e 9º							
	10º, 11º e 12º							
Outros mapas temáticos (agrícolas e florestais, de capacidade de uso dos solos, etc.)- especifique	7º, 8º e 9º							
	10º, 11º e 12º							
Mapas em relevo	7º, 8º e 9º							
	10º, 11º e 12º							

17. Material de Ensino (continuação)

Frequência de Utilização

	Anos	Uma ou mais vezes por semana	Uma vez por quin- zena	Uma vez por mês	Uma vez por tri- mestre	Uma vez por ano	Nunca	Não existe na Escola
Mapas em transparências	7º, 8º e 9º							
	10º, 11º e 12º							
Mapas policopiados	7º, 8º e 9º							
	10º, 11º e 12º							
Atlas	7º, 8º e 9º							
	10º, 11º e 12º							
Outros mapas - especifi- que.....	7º, 8º e 9º							
	10º, 11º e 12º							
Globo	7º, 8º e 9º							
	10º, 11º e 12º							
Fotografias aéreas	7º, 8º e 9º							
	10º, 11º e 12º							
Outras fotografias - es- pecifique.....	7º, 8º e 9º							
	10º, 11º e 12º							
Equipamento de meteorologia								
Termômetros vários	7º, 8º e 9º							
	10º, 11º e 12º							
Higrômetro	7º, 8º e 9º							
	10º, 11º e 12º							
Pluviômetro	7º, 8º e 9º							
	10º, 11º e 12º							
Barômetro	7º, 8º e 9º							
	10º, 11º e 12º							
Anemômetro	7º, 8º e 9º							
	10º, 11º e 12º							
Helioscópio	7º, 8º e 9º							
	10º, 11º e 12º							
Mapas sinópticos	7º, 8º e 9º							
	10º, 11º e 12º							
Outro equipamento - espe- cifique.....	7º, 8º e 9º							
	10º, 11º e 12º							
Outro material								
Bússola	7º, 8º e 9º							
	10º, 11º e 12º							
Planetário	7º, 8º e 9º							
	10º, 11º e 12º							
Amostras de minerais e de rochas	7º, 8º e 9º							
	10º, 11º e 12º							
Tabelas de dados esta- tísticos	7º, 8º e 9º							
	10º, 11º e 12º							
Calculadora	7º, 8º e 9º							
	10º, 11º e 12º							
Outro material - especifi- que.....	7º, 8º e 9º							
	10º, 11º e 12º							

18. Trabalho de campo, visitas e excursões

10

18.1. Indique se considera estas actividades indispensáveis para o ensino da Geografia

Sim

Não

☐☐

18.2. Indique as razões da resposta dada em 18.1.....

.....

.....

.....

18.3. Indique as dificuldades que encontra para a realização destas actividades

.....

.....

.....

18.4. Relativamente ao ano lectivo de 1982-1983 indique quais as actividades que já realizou, assim como o tempo gasto em efectua-las. Se planeia realizar outras actividades durante o corrente ano lectivo indique igualmente quais

Ano e Área	Actividades realizadas ou planeadas	Tempo
7º ano		
8º ano		
9º ano		
Área A 11º ano		
Área C 10º ano		
Área C 11º ano		
Área D 10º ou 11º anos		
12º ano 1º, 2º e 3º cursos		
12º ano Técnico do Ambiente		

19. Programas19.1. - 7º, 8º e 9º anos de escolaridade

- a) Indique segundo a sua opinião quais são as contribuições específicas da Geografia para a formação dos alunos que justificam a sua inclusão no currículo do curso geral e diga se considera que os programas não incluem algumas noções de carácter geográfico que considera indispensáveis para essa formação

- b) Como sabe os conteúdos gerais dos actuais programas de Geografia são os seguintes:

7º ano - Geografia Física
8º ano - " de Portugal
9º ano - " Humana

Indique quais as razões porque concorda ou discorda com os conteúdos gerais dos programas e com a sequência adoptada e no caso de discordar sugira modificações que julgue poderem contribuir para a melhoria destes programas

- c) Indique quais os principais problemas que lhe surgiram ao ensinar estes programas e sugira inovações que possam contribuir para a melhoria do ensino da Geografia nos 7º, 8º e 9º anos de escolaridade

19. Programas19.2. - 10^o, 11^o e 12^o anos de escolaridade

Dê a sua opinião relativamente aos programas de Geografia dos Cursos Complementares que já ensinou em anos anteriores ou que ensina actualmente

(Área A - 11^o ano ; Área C - 10^o e 11^o anos ; Área D - 10^o ou 11^o anos ;
12^o ano - 1^o, 2^o e 3^o cursos ; 12^o ano - Técnico do Ambiente)

Nota - Utilize uma página para cada programa e indique claramente a área ou curso e o ano a que se refere

Área ou Curso Ano(s)

- a) Diga se considera que o programa de Geografia está bem adaptado às necessidades e aos interesses dos alunos do(s) referido(s) ano(s) e área ou curso e indique as razões da sua resposta

- b) Indique os principais problemas que lhe surgiram ao ensinar o referido programa

- c) Sugira modificações no programa e/ou outras inovações que julgue poderem contribuir para a melhoria do ensino da Geografia na referida área ou curso

19. Programas19.2. - 10^o, 11^o e 12^o anos de escolaridade (continuação)Área ou CursoAno(s)

- a) Diga se considera que o programa de Geografia está bem adaptado às necessidades e aos interesses dos alunos do(s) referido(s) ano(s) e área ou curso (s) e indique as razões da sua resposta

- b) Indique os principais problemas que lhe surgiram ao ensinar o referido programa

- c) Sugira modificações no programa e/ou outras inovações que julgue poderem contribuir para a melhoria do ensino da Geografia na referida área ou curso

Nota - Se precisar de mais páginas para dar a sua opinião sobre os programas de outras áreas ou outros cursos dos 10^o, 11^o e 12^o anos de escolaridade fará o favor de fazer fotocópias desta página 13 ou juntará uma folha onde indicará a área ou curso e o(s) ano(s) a que se refere e onde mencionará as alíneas a), b) e c)

Document D2.119th year pupils' questionnaireQUESTIONÁRIO

1

Destinado aos alunos
do 9º ano de escolaridade

Nome da Escola Secundária.....

Localidade.....

1. DATA DE NASCIMENTO do aluno

Dia	Mês	Ano
<input type="text"/>	<input type="text"/>	<input type="text"/>

2. SEXO (Ponha uma cruz no quadrado apropriado)

Masculino Feminino

☐ ☐

3. ÁREA VOCACIONAL - Indique a área vocacional que frequenta no 9º ano de escolaridade
4. CLASSIFICAÇÕES OBTIDAS - Indique as classificações que obteve no 3º período em Português, Geografia e Matemática nos 7º e 8º anos de escolaridade

Classificações obtidas no 3º período

	Português	Geografia	Matemática
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7º ano de escolaridade	_____	<input type="text"/>	<input type="text"/>	<input type="text"/>
8º ano de escolaridade	_____	<input type="text"/>	<input type="text"/>	<input type="text"/>

5. ORDEM DE PREFERÊNCIA DAS DIFERENTES DISCIPLINAS (1 a 11) - Indique a ordem

de preferência que tem pelas diferentes disciplinas, colocando o número 1 no quadrado correspondente à disciplina que prefere, o número 2 no quadrado correspondente à disciplina que prefere em segundo lugar, e assim sucessivamente, até 11. Deixe em branco o quadrado correspondente à língua estrangeira que não frequenta.

Português	<input type="checkbox"/>
Francês	<input type="checkbox"/>
Inglês	<input type="checkbox"/>
Alemão	<input type="checkbox"/>
Matemática	<input type="checkbox"/>
História	<input type="checkbox"/>
Geografia	<input type="checkbox"/>
Biologia	<input type="checkbox"/>
C. Físico-Químicas	<input type="checkbox"/>
Desenho	<input type="checkbox"/>
Área Vocacional	<input type="checkbox"/>
Educação Física	<input type="checkbox"/>

6. GEOGRAFIA

6.1. Se incluiu a disciplina de Geografia entre as seis primeiras disciplinas que indicou por ordem de preferência, assinale com uma cruz as três principais razões que o(a) levaram a colocá-la entre as disciplinas que relativamente mais lhe agradam

- (a) A disciplina de Geografia dá-me os conhecimentos necessários para poder orientar-me através da utilização da bússola e para localizar a minha Escola, a localidade onde vivo, Portugal, etc., através do uso de plantas e de mapas ☐
- (b) A disciplina de Geografia permite-me adquirir conhecimentos sobre os aspectos físicos do Globo (relêvo, clima, vegetação,...) ☐
- (c) A disciplina de Geografia permite-me adquirir conhecimentos sobre os aspectos humanos do Globo (população, actividades económicas,...) ☐
- (d) A disciplina de Geografia ajuda-me a compreender os principais problemas sociais e económicos do Mundo actual e as possíveis soluções para os resolver ☐
- (e) A disciplina de Geografia fornece-me conhecimentos que me serão úteis no futuro ☐
- (f) Nas aulas de Geografia o Professor organiza actividades variadas: trabalhos de grupo, trabalhos individuais, leitura de mapas, execução de gráficos, etc. ☐
- (g) Nas aulas de Geografia o Professor usa diferentes meios audiovisuais: projector de diapositivos, projector de filmes, retro-projector, etc. ☐
- (h) A disciplina de Geografia é fácil ☐

6.2. Se incluiu a disciplina de Geografia entre as cinco últimas disciplinas que indicou por ordem de preferência, assinale com uma cruz as três principais razões que o(a) levaram a colocá-la entre as disciplinas que relativamente menos lhe agradam

- (a) Não gosto do estudo dos aspectos físicos do Globo terrestre (relêvo, clima, vegetação, etc.) ☐
- (b) Não gosto do estudo da Geografia Humana (população, características e distribuição espacial das principais actividades económicas e dos centros urbanos, etc.) ☐
- (c) A disciplina de Geografia não me ajuda a compreender os problemas sociais e económicos do Mundo actual e as possíveis soluções para os resolver ☐
- (d) A disciplina de Geografia não me fornece conhecimentos que me serão úteis no futuro ☐
- (e) As aulas de Geografia são monótonas porque o Professor não organiza actividades variadas: trabalhos de grupo, trabalhos individuais, leitura de mapas, execução de gráficos, etc. ☐
- (f) As aulas de Geografia são pouco interessantes porque o Professor não usa diferentes meios audio-visuais: projector de diapositivos, projector de filmes, retroprojector, etc. ☐
- (g) A disciplina de Geografia é difícil ☐
- (h) A matéria de Geografia é toda para decorar ☐

6.3. Indique se o estudo dos seguintes aspectos da Geografia lhe agrada, lhe é indiferente ou lhe desagrada (Ponha uma cruz no rectângulo apropriado)

	Agrada-me	É-me Indiferente	Desagrada-me
<u>Geografia Física</u>			
6.3.1. Estudo do relêvo			
6.3.2. " " clima			
6.3.3. " da vegetação			
<u>Geografia Humana/Económica</u>			
6.3.4. Estudo da população			
6.3.5. " " actividade agrícola			
6.3.6. " " " industrial			
6.3.7. " " " comercial e dos transportes			
6.3.8. Estudo dos aglomerados populacionais			
6.3.9. " do desenvolvimento económico			
<u>Geografia Regional</u>			
6.3.10. Estudo de grandes regiões ou de continentes			
6.3.11. Estudo de Portugal Continental e Insular			
6.3.12. Estudo de outros países			
6.3.13. " da região onde está situada a Escola			
6.3.14. <u>Leitura e interpretação de mapas</u>			
6.3.15. <u>Leitura, interpretação e execução de gráficos</u>			

7. Dê uma definição de Geografia

8. Faça observações e sugestões sobre a disciplina de Geografia

Document D2.1212th year students' questionnaire

1

QUESTIONÁRIO

Destinado aos alunos do 12^o ano de escolaridade
inscritos em Geografia

Nome da Escola Secundária.....

Localidade.....

1. Data de Nascimento

Dia Mês Ano

2. Sexo

M F
☐ ☐

3. Áreas de Estudo

3.1. Indique a área vocacional que frequentou no 9^o ano de escolaridade
9^o ano de escolaridade área vocacional

3.2. Indique a área de estudo e a formação vocacional que frequentou nos 10^o e 11^o anos de escolaridade

	Área de Estudo	Formação Vocacional
10 ^o ano —	<input type="text"/>	<input type="text"/>
11 ^o ano —	<input type="text"/>	<input type="text"/>

3.3. Indique a via de estudo e o curso que frequenta actualmente no 12^o ano de escolaridade

Via de Estudo	Curso
<input type="text"/>	<input type="text"/>

3.4. Indique quais as disciplinas que frequenta no 12^o ano de escolaridade

3.5. Indique se frequentou a disciplina de Geografia nos 9^o, 10^o e 11^o anos de escolaridade e a classificação que obteve no 3^o período em Geografia em cada um dos referidos anos

	Frequentou a disciplina de Geografia		Classificação obtida no 3 ^o período em Geografia
	Sim	Não	
9 ^o ano —	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
10 ^o ano —	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
11 ^o ano —	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

3.6. Indique as classificações que obteve no 3^o período em Português e Filosofia nos 10^o e 11^o anos de escolaridade

	Português	Filosofia
10 ^o ano —	<input type="text"/>	<input type="text"/>
11 ^o ano —	<input type="text"/>	<input type="text"/>

4. ESTUDO DA GEOGRAFIA

4.1. Razões que o (a) levaram a inscrever-se em Geografia no 12º ano de escolaridade

2

Estão abaixo indicadas algumas razões que o (a) podem ter levado a inscrever-se em Geografia. Indique, pondo uma cruz no quadrado apropriado, a importância que teve para si cada uma delas

	Sem importância	De pequena importância	Importante	Muito importante	De fundamental importância
4.1.1. Gostei de estudar Geografia nos anos anteriores					
4.1.2. Estou interessado em aprofundar os meus conhecimentos de Geografia Física					
4.1.3. A Geografia ajuda-me a compreender os problemas referentes à Conservação do Ambiente					
4.1.4. Estou interessado em aprofundar os meus conhecimentos de Geografia Humana					
4.1.5. A Geografia ajuda-me a compreender os problemas sócio-económicos portugueses					
4.1.6. A Geografia ajuda-me a compreender os problemas sócio-económicos do Mundo actual					
4.1.7. Obtive bons resultados em Geografia nos anos anteriores					
4.1.8. Quero estudar Geografia na Universidade					
4.1.9. Julgo que os conhecimentos de Geografia me serão úteis para a minha futura vida profissional					
4.1.10. Julgo que os conhecimentos de Geografia me serão úteis para a vida prática					
4.1.11. A disciplina de Geografia combina bem com as outras disciplinas em que estou inscrito					

3

4.1. Razões que o(a) levaram a inscrever-se em Geografia no 12º ano de escolaridade (continuação)

Estão abaixo indicadas algumas razões que o(a) podem ter levado a inscrever-se em Geografia. Indique, pondo uma cruz no quadrado apropriado a importância que teve para si cada uma delas

	Sem importância	De pequena importância	Importante	Muito importante	De fundamental importância
4.1.12. O Conselheiro de Orientação aconselhou a inscrever-me em Geografia					
4.1.13. O meu Professor de Geografia do 11º ano aconselhou a inscrever-me em Geografia					
4.1.14. Os meus pais ou um amigo aconselharam a inscrever-me em Geografia					
4.1.15. A opção de Geografia era a única que se adaptava bem ao meu horário					
4.1.16. A Geografia era a mais fácil das opções					
4.1.17. A Geografia é uma disciplina fácil					
4.1.18. Os meus amigos também se inscreveram em Geografia					
4.1.19. Outra(s) razão(ões) - indique qual(ais)					

4.2. Indique qual o interesse que tem pelo estudo das diferentes partes da Geografia

	Muito Interesse	Bastante Interesse	Pouco Interesse	Nenhum Interesse
4.2.1. História da Geografia				
<u>Geografia Física</u>				
4.2.2. Geomorfologia				
4.2.3. Climatologia				
4.2.4. Meteorologia				
4.2.5. Biogeografia				
<u>Geografia Humana / Económica</u>				
4.2.6. Geografia da População				
4.2.7. " Rural				
4.2.8. " Industrial				
4.2.9. " do Comércio e dos Transportes				
4.2.10. Geografia Urbana				
4.2.11. " do Desenvolvimento Económico				
<u>Geografia Regional</u>				
4.2.12. Estudo de grandes regiões ou continentes				
4.2.13. Estudo de Portugal Continental e Insular				
4.2.14. Estudo de outros países				
4.2.15. Estudo da região onde está situada a Escola				
4.2.16. <u>Leitura e interpretação de mapas</u>				
4.2.17. <u>Leitura, interpretação e execução de gráficos</u>				
4.2.18. <u>Trabalho de campo</u>				
4.2.19. Outra(s) - Indique qual(ais)				

5. Dê uma definição de Geografia

5

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6.1. Dê a sua opinião sobre a maneira como o estudo da Geografia nos 7^o, 8^o e 9^o anos poderia ser melhorado

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6.2. Dê a sua opinião sobre a maneira como o estudo da Geografia nos 10^o, 11^o e 12^o anos de escolaridade poderia ser melhorado

--

6.3. Dê a sua opinião sobre a importância dos conhecimentos adquiridos nas aulas de Geografia para a vida prática

Sem importância	De pequena importância	Importantes	De grande importância	De fundamental importância

6.4. Explique resumidamente a resposta anterior

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7. Planos para o futuro

7.1. Indique o que planeia fazer após a conclusão do 12º ano de escolaridade

Frequentar a Universidade ☐

Frequentar um Curso Médio ☐

Procurar um emprego ☐

7.2. Se planeia continuar a estudar indique por ordem decrescente de preferência os cursos que gostaria de frequentar

1ª preferência

2ª preferência

3ª preferência

7.3. Se não tenciona continuar a estudar indique por ordem decrescente de preferência os ramos de actividade que mais lhe interessam

1ª preferência

2ª preferência

3ª preferência

8. Outras opiniões ou sugestões sobre a disciplina ou sobre o ensino da Geografia

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APPENDIX D3

Results Not Included in the Text of Chapter 6

Teachers' Questionnaires

Table D3.1

Chi-squared tests of independence between paired variables

Cross-tabulated variables	Signifi- cant at 95% level	Signifi- cant at 99% level	Signifi- cant at 95% level	Signifi- cant at 99% level
<u>Teachers' academic qualifications by use of teaching strategies and evaluation methods</u>	Unified General Course		Complementary Course and 12th year	
<u>Teaching Strategies</u>				
(a) - The teacher talks, pupils make notes.		✓	✓	
(b) - The teacher talks, pupils make notes, do diagrams, draw maps.		✓	-	-
(c) - The teacher talks with pupils (the teacher talks, pupils respond) and pupils make notes.	-	-	-	-
(d) - The teacher talks with pupils (the teacher talks, pupils respond) and pupils make notes, do diagrams, draw maps.		✓	-	-
(e) - The teacher dictates notes.		✓		✓
(f) - The teacher proposes individual work to be done in the classroom. The presentation of oral reports is followed by a whole class discussion.	-	-	-	-
(g) - The teacher proposes work to be done by small groups of pupils in the classroom. Group oral reports are followed by a whole class discussion.	-	-	-	-
(h) - The teacher proposes an individual practical work to be done in the classroom (for instance: map reading, graph construction), followed by a whole class discussion of the results.	-	-	-	-
(i) - The teacher proposes practical work to be done by small groups of pupils in the classroom, followed by a whole class discussion.	-	-	-	-
(j) - One pupil prepares a topic outside the classroom. Its presentation is followed by a whole class discussion.		✓		✓
(k) - A small group of pupils prepares a topic outside the classroom. Its presentation is followed by a whole class discussion.	-	-		✓
(l) - The teacher makes use of slides, pupils make notes, followed by a whole class discussion.		✓		✓
(m) - The teacher involves pupils in a geographical classroom game or simulation.	-	-	-	-
(n) - The teacher sets students an open ended enquiry (i.e., studentes make decisions, teacher advises, end result not known). Whole class discussion of the results.		✓	-	-
<u>Evaluation Methods</u>				
(o) - The teacher sets a written test without the help of books and/or notes, at a date which had previously been fixed.	-	-	✓	
(p) - The teacher sets a written test with the help of books and/or notes, whose date had previously been fixed.		✓	-	-
(q) - The teacher sets a written test without the help of books and/or notes, whose date had not previously been fixed.	-	-	-	-
(r) - The teacher sets a written test with the help of books and/or notes whose date had not previously been fixed.	-	-	-	-
(s) - The teacher sets a practical assignment (for instance: map reading, graph interpretation and so on).	-	-	-	-

Notes: 1) - A recoding was done of teachers' academic qualifications and of the frequency of use of the different methods.

2) - The letters correspond to the order of strategies and methods presented in the questionnaire.

Teacher's academic qualifications by use of teaching strategies and evaluation methods

Significant features of these tests were as follows:

Unified General Course

- More teachers than expected without a degree in geography very frequently or frequently used the following strategies:

- a - the teacher talks, pupils make notes;
- b - the teacher talks, pupils make notes, do diagrams, draw maps;
- e - the teacher dictate notes;
- j - one pupil prepares a topic outside the classroom; its presentation is followed by a whole class discussion.

- More teachers than expected without a degree in geography used occasionally the following method:

- p - the teacher sets a written test with the help of books and/or notes, whose date had previously been fixed.

- Fewer teachers than expected with a degree in geography very frequently or frequently used strategies a, b, e and j, and occasionally method p.

However, strategies e and j, and method p were occasionally or never used by the majority of teachers.

- More teachers than expected with a degree in geography very frequently or frequently used the following strategies:

- d - the teacher talks with pupils (the teacher talks, pupils respond) and pupils make notes, do diagrams, draw maps.
- l - the teacher makes use of slides, pupils make notes, followed by a whole class discussion.

- More teachers than expected with a degree in geography used occasionally the following strategy:

n - the teacher sets students an open ended enquiry (i.e. students make decisions, teacher advises, end result not known). Whole class discussion of the results.

- Fewer teachers than expected without a degree in geography very frequently or frequently used strategies d and l, and occasionally strategy n.

However, strategy n was occasionally or never used by the majority of teachers.

Complementary Course and 12th year

- More teachers than expected without a degree in geography very frequently or frequently used the following strategies:

- a - the teacher talks, pupils make notes.
- e - the teacher dictate notes.
- j - one pupil prepares a topic outside the classroom; its presentation is followed by a whole class discussion.
- k - a small group of pupils prepares a topic outside the classroom; its presentation is followed by a whole class discussion.

- Fewer teachers than expected with a degree in geography used the strategies above.

- More teachers than expected with a degree in geography used the following strategies:

- l - the teacher makes use of slides, pupils make notes, followed by a whole class discussion.

- Fewer teachers than expected without a degree in geography used the strategy above.

The method of assessment o - the teacher sets a written test without the help of books and/or notes whose date had previously been fixed - seems to be more often used by teachers with a degree in geography than by teachers without a degree in geography.

Table D3.2

Chi-squared tests of independence between paired variables

Cross-tabulated variables	Signifi- cant at 95% level	Signifi- cant at 99% level	Signifi- cant at 95% level	Signifi- cant at 99% level
<u>Teachers' training qualifications by use of teaching strategies and evaluation methods</u>	Unified General Course		Complementary Course and 12th year	
<u>Teaching Strategies</u>				
(a) - The teacher talks, pupils make notes.		✓		x
(b) - The teacher talks, pupils make notes, do diagrams, draw maps.		x		x
(c) - The teacher talks with pupils (the teacher talks, pupils respond) and pupils make notes.	-	-	-	-
(d) - The teacher talks with pupils (the teacher talks, pupils respond) and pupils make notes, do diagrams, draw maps.		x	-	-
(e) - The teacher dictates notes.		✓		x
(f) - The teacher proposes individual work to be done in the classroom. The presentation of oral reports is followed by a whole class discussion.	-	-	-	-
(g) - The teacher proposes work to be done by small groups of pupils in the classroom. Group oral reports are followed by a whole class discussion.	-	-		x
(h) - The teacher proposes an individual practical work to be done in the classroom (for instance: map reading, graph construction), followed by a whole class discussion of the results.	-	-	-	-
(i) - The teacher proposes practical work to be done by small groups of pupils in the classroom, followed by a whole class discussion.	✓		-	-
(j) - One pupil prepares a topic outside the classroom. Its presentation is followed by a whole class discussion.	-	-	✓	
(k) - A small group of pupils prepares a topic outside the classroom. Its presentation is followed by a whole class discussion.	-	-	-	-
(l) - The teacher makes use of slides, pupils make notes, followed by a whole class discussion.		✓		x
(m) - The teacher involves pupils in a geographical classroom game or simulation.	-	-	-	-
(n) - The teacher sets students an open ended enquiry (i.e., students make decisions, teacher advises, end result not known). Whole class discussion of the results.		x	-	-
<u>Evaluation Methods</u>				
(o) - The teacher sets a written test without the help of books and/or notes, at a date which had previously been fixed.	-	-	-	-
(p) - The teacher sets a written test with the help of books and/or notes, whose date had previously been fixed.		x	-	-
(q) - The teacher sets a written test without the help of books and/or notes, whose date had not previously been fixed.	✓		-	-
(r) - The teacher sets a written test with the help of books and/or notes whose date had not previously been fixed.	-	-	-	-
(s) - The teacher sets a practical assignment (for instance: map reading, graph interpretation and so on).	-	-	-	-

Notes: 1) - A recoding was done of the frequency of use of the different methods.

2) - The letters correspond to the order of strategies and methods presented in the questionnaire.

x - These cross-tabulations produced more than 20% of cells with expected frequencies below 5. No valid conclusions could therefore be drawn from the test.

Teacher's training qualifications by use of teaching strategies and evaluation methods

Significant features of these tests were as follows:

Unified General Course

- More teachers than expected without teacher training very frequently or frequently used the following strategies:

- a - the teacher talks, pupils make notes.
- e - the teacher dictates notes.

- Fewer teachers than expected with teacher training or who were undergoing teacher training used these strategies very frequently or frequently.

- More teachers than expected with teacher training or who were undergoing teacher training used the following strategies:

- i - the teacher proposes a practical work to be done by small groups of pupils in the classroom, followed by a whole class discussion.
- l - the teacher makes use of slides, pupils make notes, followed by a whole class discussion.

- Fewer teachers than expected without teacher training used these strategies.

- More teachers than expected with teacher training very frequently or frequently used the following method:

- q - the teacher set a written test without the help of books and/or notes whose date has not previously been fixed.

However, strategy e and method q were occasionally or never used by the majority of teachers.

Complementary Course and 12th year

Only the use of strategy j - one pupil prepares a topic outside the classroom,

its presentation is followed by a whole class discussion - was significant at 95% level.

- More teachers than expected without teacher training used it very frequently or frequently.

Table D3.3

Chi-squared tests of independence between paired variables

Cross-tabulated variables	Signifi- cant at 95% level	Signifi- cant at 99% level	Signifi- cant at 95% level	Signifi- cant at 99% level
<u>Teachers' academic qualifications by use of teaching resources</u>	Unified General Course		Complementary Course and 12th year	
Overhead projector		✓		x
Slide projector		✓		x
Printed material projector		✓	✓	
Tape recorder		✓		
Plans		✓		
Ordnance Survey maps		✓		x
Small scale maps (wall maps)		✓		
Geological maps		✓	✓	
Thematic maps (others than geological)	✓			
Transparencies (maps on)		✓		✓
Photocopies of maps		✓		✓
Other maps		✓		
Globe		✓		
Photos (others than aerial)		✓		
Thermometer		✓		
Hygrometer		✓		
Barometer		✓		
Wind gauge (anemometer)	✓			
Synoptic maps		✓	✓	
Compass		✓		
Samples of minerals and rocks		✓		
Statistical data tables		✓	✓	

Notes: 1) A recoding was done of teachers' academic qualifications and of the frequency of use of the different teaching resources.

2) Only the cross-tabulations whose chi-squared tests of independence were statistically significant were included.

x - These cross-tabulations produced more than 20% of cells with expected frequencies below 5. No valid conclusions could therefore be drawn from the test.

Teacher's academic qualifications by use of teaching resources

Significant features of these tests were as follows:

Unified General Course

- More teachers than expected with a degree in geography very frequently or frequently used the following teaching resources:

- Overhead projector
- Slide projector
- Printed material projector
- Plans
- Ordnance survey maps
- Small scale maps
- Thematic maps (other than geological)
- Transparencies (maps on)
- Photocopies of maps
- Other maps
- Globe
- Photos (other than aerial)
- Synoptic maps
- Statistical data tables

- More teachers than expected with a degree in geography used occasionally the following teaching resources:

- Tape recorder
- Geological maps
- Thermometers
- Hygrometer
- Barometer
- Wind-gauge (anemometer)
- Compass
- Samples of minerals and rocks

- Fewer teachers than expected without a degree in geography very frequently

or frequently used the first list of teaching resources and occasionally the second one.

Complementary Course and 12th year

- More teachers than expected with a degree in geography very frequently or frequently used the following teaching resources:

Printed material projector
Transparencies (maps on)
Photocopies of maps
Synoptic maps
Statistical data tables

- More teachers than expected with a degree in geography used occasionally the following teaching resources:

Geological maps

- Fewer teachers than expected without a degree in geography very frequently or frequently used the first list of teaching materials :

Printed material projector
Transparencies (maps on)
Photocopies of maps
Synoptic maps
Statistical data table

and used occasionally:

Geological maps

Table D3.4**Chi-squared tests of independence between paired variables**

Cross-tabulated variables	Signifi- cant at 95% level	Signifi- cant at 99% level	Signifi- cant at 95% level	Signifi- cant at 99% level
<u>Teachers' training qualifications by use of teaching resources</u>	Unified General Course		Complementary Course and 12th year	
Overhead projector		✓		x
Slide projector		✓		x
Printed material projector		✓		x
Film projector (16 mm)	x			
Tape recorder		x	x	
Plans		✓		
Ordnance Survey maps		✓	x	
Small scale maps (wall maps)		x		
Geological maps		✓	x	
Thematic maps (others than geological)		✓		
Transparencies (maps on)		✓		✓
Photocopies of maps		✓		✓
Other maps	x		x	
Globe	✓			
Photos (others than aerial)		x		x
Thermometer		✓		x
Hygrometer		✓		
Rain gauge		x		
Barometer		✓		x
Wind gauge (anemometer)		x		
Insolation gauge		x		
Synoptic maps		✓		x
Compass		✓		
Samples of minerals and rocks		✓	x	
Statistical data tables		✓	✓	
Calculator				x
Other material	x			

Notes: 1) A recoding was done of the frequencies of use of the different teaching resources.

2) Only the cross-tabulations whose chi-squared tests of independence were statistically significant were included.

x - These cross-tabulations produced more than 20% of cells with expected frequencies below 5. No valid conclusions could therefore be drawn from the test.

Teacher's training qualifications by use of teaching resources

Significant features of these tests were as follows:

Unified General Course

- More teachers than expected with teacher training or who were undergoing teacher training very frequently or frequently used the following teaching resources:

- Overhead projector
- Slide projector
- Printed material projector (except teachers undergoing teacher training)
- Plans
- Ordnance survey maps
- Thematic maps (other than geological maps)
- Transparencies (maps on)
- Photocopies of maps
- Globe
- Synoptic maps (except teachers undergoing teacher training)
- Statistical data tables

- More teachers than expected with teacher training or who were undergoing teacher training used occasionally the following teaching resources:

- Geological maps
- Thermometers (except teachers undergoing teacher training)
- Hygrometer
- Barometer
- Samples of minerals and rocks

- Fewer teachers than expected without teacher training very frequently or frequently used the first list of teaching resources:

- Overhead projector
- Slide projector
- Printed material projector
- Plans
- Ordnance survey maps

Thematic maps (other than geological maps)
 Transparencies (maps on)
 Photocopies of maps
 Globe
 Synoptic maps
 Statistical data tables

and used occasionally:

Geological maps
 Thermometers
 Hygrometer
 Barometer
 Samples of minerals and rocks

Complementary Course and 12th year

- More teachers than expected with teacher training or who were undergoing teacher training very frequently or frequently used the following teaching resources:

Transparencies (maps on)
 Photocopies of maps
 Statistical data tables (occasionally teachers who were undergoing teacher training)

- Fewer teachers than expected without teacher training very frequently or frequently used the above list of teaching resources.

Outdoor Activities

Unified General Course

Activities (Frequencies)

7th year

Visit to the Planetarium (22)
 Orientation exercises (20)
 Observation of physical aspects of a certain area (12)

Visit to a meteorological observatory (12)
 Observation of the local area (8)
 Observation of human and economic aspects of a certain area (8)
 Map reading (7)
 Elaboration of plans (6)
 Observation of coastal features (4)
 Inquiries (4)
 Study visits or fieldwork (not specified) (17)
 Others (12)

8th year

Observation of human and economic aspects of a certain area (44)
 Visit to a meteorological observatory (34)
 Observation of coastal features (15)
 Observation of physical aspects of a certain area (9)
 Visit to a farm (7)
 Observation of a rural area (6)
 Inquiries (6)
 Visit to a factory (4)
 Observation of urban aspects (4)
 Visit to the Planetarium (3)
 Visit to an astronomical observatory (3)
 Observation of the local area (2)
 Study visits or fieldwork (not specified) (34)
 Others (21)

9th year

Observation of human and economic aspects of a certain area (20)
 Observation of urban aspects of a certain area (15)
 Visit to a factory (11)
 Visit to a farm (10)
 Observation of a rural area (8)
 Inquiries (6)
 Visit to a meteorological observatory (5)
 Observation of the local area (4)
 Visit to a power station (4)
 Visit to agricultural offices (4)
 Study visits or fieldwork (not specified) (27)
 Others (9)

Complementary Course and 12th year"Area of study" A - 11th year

Visit to a meteorological observatory (18)
 Observation of human and economic aspects of a certain area (10)
 Observation of physical aspects of a certain area (6)
 Visit to an astronomical observatory (3)
 Visit to the Planetarium (2)
 Visit to a factory (2)
 Observation of a rural area (2)
 Study visits or fieldwork (not specified) (3)
 Others (5)

"Area of study" C - 10th and 11th years

Visit to a town and regional planning offices (2)
 Visit to a factory (2)
 Visit to a farm (1)
 Observation of urban aspects of a certain area (1)
 Visit to a meteorological observatory (1)
 Others(6)

"Area of study" D - 10th or 11th years

Observation of human and economic aspects of a certain area (4)
 Observation of urban aspects of a certain area (4)
 Visit to a farm (3)
 Visit to a factory (2)
 Observation of a rural area (2)
 Inquiries (2)
 Study visits or fieldwork (not specified) (6)
 Others (6)

12th year

Inquiries (4)
 Visit to a farm (2)
 Visit to a factory (2)
 Observation of urban aspects of a certain area (2)
 Map reading (2)
 Elaboration of maps (2)
 Visit to the Planetarium (2)
 Study visits or fieldwork (not specified) (4)
 Others (11)

9th year pupils' questionnaires**Table D3.5****Chi-squared tests of independence between selected paired variables
(9th year pupils)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
Schools' district location by preference order for geography		✓
Sex by preference order for geography		✓
Schools' district location by placing geography among the first six subjects or among the last five ones		✓
Sex by placing geography among the first six subjects or among the last five ones		✓
Marks obtained in geography in the last term of the 7th year by placing geography among the first six subjects or the last five ones		✓
Mark obtained in geography in the last term of the 8th year by placing geography among the first six subjects or the last five ones		✓

Table D3.6 a

Chi-squared tests of independence between paired variables
(9th year pupils)

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>District by Aspects of Geograpy</u>		
District by Relief	✓	
" " Climate		✓
" " Vegetation	-	-
" " Population		✓
" " Agriculture		✓
" " Industry	-	-
" " Trade and Transport		✓
" " Settlements	-	-
" " Economic Development		✓
" " Great Regions and Continents		✓
" " Portugal	✓	
" " Other Countries	✓	
" " Region		✓
" " Map work		✓
" " Graph work		✓

Table D3.6 b

Chi-squared tests of independence between paired variables
(9th year pupils)

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>Age by Aspects of Geograpy</u>		
Age by Relief	✓	
" " Climate	-	-
" " Vegetation	✓	
" " Population	✓	
" " Agriculture	✓	
" " Industry	-	-
" " Trade and Transport	-	-
" " Settlements	-	-
" " Economic Development		✓
" " Great Regions and Continents	-	-
" " Portugal	-	-
" " Other Countries	-	-
" " Region	-	-
" " Map work		✓
" " Graph work	-	-

Note: A recoding was done of the pupils' age.

Table D3.6 c

Chi-squared tests of independence between paired variables
(9th year pupils)

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>Sex by Aspects of Geograpy</u>		
Sex by Relief		✓
" " Climate	-	-
" " Vegetation	-	-
" " Population	✓	
" " Agriculture	-	-
" " Industry		✓
" " Trade and Transport	-	-
" " Settlements	-	-
" " Economic Development	-	-
" " Great Regions and Continents		✓
" " Portugal	-	-
" " Other Countries	✓	
" " Region		✓
" " Map work		✓
" " Graph work		✓

Table D3.6 d

Chi-squared tests of independence between paired variables
(9th year pupils)

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>'Specialist Area' by Aspects of Geograpy</u>		
'Specialist Area' by Relief		✓
" " " Climate		✓
" " " Vegetation	-	-
" " " Population	✓	
" " " Agriculture	-	-
" " " Industry	-	-
" " " Trade and Transport	-	-
" " " Settlements	-	-
" " " Economic Development	✓	
" " " Great Regions and Continents	-	-
" " " Portugal	-	-
" " " Other Countries	-	-
" " " Region	-	-
" " " Map work		✓
" " " Graph work		✓

Table D3.6 e

Chi-squared tests of independence between paired variables
(9th year pupils)

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>Marks obtained in Geography in the 7th year by Aspects of Geograpy</u>		
Marks by Relief	✓	
" " Climate	-	-
" " Vegetation	-	-
" " Population	-	-
" " Agriculture	-	-
" " Industry	-	-
" " Trade and Transport	-	-
" " Settlements	-	-
" " Economic Development	-	-
" " Great Regions and Continents	-	-
" " Portugal	✓	
" " Other Countries	-	-
" " Region	-	-
" " Map work		✓
" " Graph work		✓

Table D3.6 f

Chi-squared tests of independence between paired variables
(9th year pupils)

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>Marks obtained in Geography in the 8th year by Aspects of Geograpy</u>		
Marks by Relief		✓
" " Climate	✓	
" " Vegetation	✓	
" " Population	-	-
" " Agriculture	-	-
" " Industry	✓	
" " Trade and Transport	-	-
" " Settlements	-	-
" " Economic Development	✓	
" " Great Regions and Continents	-	-
" " Portugal		✓
" " Other Countries	-	-
" " Region	-	-
" " Map work		✓
" " Graph work	-	-

District by Aspects of Geography

To like studying different aspects of geography varied from district to district.

Some examples will be given:

- More pupils than expected from the districts of Beja, Braga, Bragança, Coimbra, Faro and Santarém liked studying physical aspects (relief and climate).

- Fewer pupils than expected from the districts of Aveiro, Castelo Branco, Guarda, Leiria, Lisboa and Portalegre liked studying these aspects.

In relation to human, economic and regional aspects there are differences from district to district too.

For instance, fewer pupils than expected from the district of Lisboa liked studying aspects concerning population, agriculture, settlements (not statistically significant), economic development, Portugal and the region.

More pupils than expected from the same district liked studying trade and transport, great regions and continents and other countries.

Fewer pupils than expected from the district of Porto liked studying aspects concerning agriculture, industry (not statistically significant), trade and transport, economic development and the region.

More pupils than expected from the same district liked studying aspects concerning population, settlements (not statistically significant), great regions and continents , Portugal and other countries.

More pupils than expected from the district of Lisboa liked doing map and graph work; fewer pupils than expected from the district of Porto liked doing map and graph work.

These are only a few examples of differences between districts which are difficult to explain, without a study in greater depth, that is out of the scope of this work.

Age by Aspects of Geography

Differences according to pupils' age varied from aspect to aspect of geography, and again they are difficult to explain.

The most interesting differences (statistically significant) concern the study of agriculture and doing map work.

More pupils than expected aged 16 years or more liked studying agricultural aspects; fewer pupils than expected aged 15 years or less liked studying the same aspects.

More pupils than expected aged 14 years or less liked doing map work; fewer pupils than expected aged 15 years or more liked doing the same work.

12th year students' questionnaires**Table D3.7****Other suggestions on how to improve geography teaching
(12th year students)**

Suggestions	F	% of respon- ses	% of cases
Reduce syllabus content (a)	48	16.0	25.1
More active teaching	40	13.4	20.8
Concerning the subject	39	13.0	20.3
Modify syllabus	37	12.3	19.1
Study visits and excursions	17	5.7	8.9
Motivate students	16	5.4	8.3
Outdoor classes	12	4.0	6.3
Use of more teaching resources	11	3.7	5.7
Study some topics more in depth	11	3.7	5.7
More qualified teachers	8	2.7	4.2
Whole class discussion of topics	7	2.3	3.6
Concerning teaching strategies and resources	7	2.3	3.6
Concerning institutional aspects	6	2.0	2.1
More use of audio-visual media	5	1.7	2.6
More use of maps, globe and graphs	5	1.7	2.6
Group work	5	1.7	2.6
Textbook with the whole syllabus content	5	1.7	2.6
Study current events	5	1.7	2.6
Study Portugal	4	1.3	2.1
More teaching hours/week	3	1.0	1.6
Others	8	2.7	4.2
Total of responses	299 (b)	100.0	154.6 (b)

(Respondents 192)

(a) - Twelve students indicated as an alternative, increasing the number of teaching hours per week.

(b) - Some students gave more than one response.

Table D3.8

**Chi-squared tests of independence between selected
cross-tabulated variables
(12th year students)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>District by reasons for choosing geography in the 12th year</u> <u>Reasons</u>		
1 - I enjoyed studying geography in previous years		✓
2 - I would like to know more about physical geography		x
3 - Geography helps me to understand problems concerning the preservation of the environment		✓
4 - I would like to know more about human geography	-	-
5 - Geography helps me to understand social and economic problems of Portugal		✓
6 - Geography helps me to understand social and economic problems of the world of today		✓
7 - I had good marks in geography in previous years		✓
8 - I would like to study geography at University		x
9 - Geographical knowledge will be useful for my career or job		✓
10 - Geographical knowledge will be useful for my day to day life		✓
11 - Geography fitted in with other subjects I am attending		✓
12 - The Careers Adviser advised me to take geography	x	
13 - The geography teacher I had in the 11th year advised me to take geography in the 12th year	-	-
14 - My parents or one of my friends advised me to take geography	x	
15 - Geography was the only subject that fitted my timetable		x
16 - I thought geography was the easiest available option		✓
17 - I thought geography would be easy		x
18 - My friends took geography	x	

x - These cross-tabulations produced more than 20% of cells with expected frequencies below 5. No valid conclusions could therefore be drawn from the test.

Table D3.9

**Chi-squared tests of independence between selected
cross-tabulated variables
(12th year students)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>Sex by reasons for choosing geography in the 12th year</u> <u>Reasons</u>		
1 - I enjoyed studying geography in previous years	-	-
2 - I would like to know more about physical geography		✓
3 - Geography helps me to understand problems concerning the preservation of the environment	-	-
4 - I would like to know more about human geography	-	-
5 - Geography helps me to understand social and economic problems of Portugal	-	-
6 - Geography helps me to understand social and economic problems of the world of today	-	-
7 - I had good marks in geography in previous years	-	-
8 - I would like to study geography at University	✓	
9 - Geographical knowledge will be useful for my career or job	-	-
10 - Geographical knowledge will be useful for my day to day life	-	-
11 - Geography fitted in with other subjects I am attending	-	-
12 - The Careers Adviser advised me to take geography	✓	
13 - The geography teacher I had in the 11th year advised me to take geography in the 12th year		x
14 - My parents or one of my friends advised me to take geography	-	-
15 - Geography was the only subject that fitted my timetable	-	-
16 - I thought geography was the easiest available option		✓
17 - I thought geography would be easy	-	-
18 - My friends took geography	✓	

x - These cross-tabulations produced more than 20% of cells with expected frequencies below 5. No valid conclusions could therefore be drawn from the test.

Table D3.10

**Chi-squared tests of independence between selected
cross-tabulated variables
(12th year students)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>12th year course by reasons for choosing geography</u> <u>Reasons</u>		
1 - I enjoyed to studying geography in previous years		✓
2 - I would like to know more about physical geography		✓
3 - Geography helps me to understand problems concerning the preservation of the environment		✓
4 - I would like to know more about human geography		✓
5 - Geography helps me to understand social and economic problems of Portugal	-	-
6 - Geography helps me to understand social and economic problems of the world of today	-	-
7 - I had good marks in geography in previous years	-	-
8 - I would like to study geography at University		✓
9 - Geographical knowledge will be useful for my career or job		✓
10 - Geographical knowledge will be useful for my day to day life		✓
11 - Geography fitted in with other subjects I am attending		✓
12 - The Careers Adviser advised me to take geography	-	-
13 - The geography teacher I had in the 11th year advised me to take geography in the 12th year	-	-
14 - My parents or one of my friends advised me to take geography	-	-
15 - Geography was the only subject that fitted my timetable	-	-
16 - I thought geography was the easiest available option		✓
17 - I thought geography would be easy	✓	
18 - My friends took geography	-	-

Table D3.11 a

**Chi-squared tests of independence between selected
cross-tabulated variables
(12th year students)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>District by Aspects of Geography (level of interest)</u>		
History of Geography		✓
Morphology		✓
Climatology		✓
Meteorology	-	-
Biogeography	✓	
Geography of Population	-	-
Rural Geography		✓
Geography of Industry	-	-
Geography of Commerce and Transport	-	-
Urban Geography	-	-
Economic Geography	-	-
Regions and Continents	-	-
Portugal	-	-
Other Countries	-	-
Region (where the school is located)		✓
Mapwork	-	-
Graphwork	✓	
Fieldwork		✓

(See p. 521)

Table D3.11 b

**Chi-squared tests of independence between selected
cross-tabulated variables
(12th year students)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>Age by Aspects of Geography (level of interest)</u>		
History of Geography	✓	
Morphology	✓	
Climatology	-	-
Meteorology	-	-
Biogeography		✓
Geography of Population	✓	
Rural Geography	-	-
Geography of Industry	-	-
Geography of Commerce and Transport	-	-
Urban Geography	-	-
Economic Geography	-	-
Regions and Continents	-	-
Portugal	-	-
Other Countries	-	-
Region (where the school is located)	-	-
Mapwork	-	-
Graphwork	-	-
Fieldwork	-	-

Table D3.11 c

**Chi-squared tests of independence between selected
cross-tabulated variables
(12th year students)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>Sex by Aspects of Geography (level of interest)</u>		
History of Geography	-	-
Morphology	-	-
Climatology	-	-
Meteorology	-	-
Biogeography	-	-
Geography of Population	✓	
Rural Geography	✓	
Geography of Industry	-	-
Geography of Commerce and Transport	-	-
Urban Geography	-	-
Economic Geography	-	-
Regions and Continents	-	-
Portugal		✓
Other Countries	-	-
Region (where the school is located)		✓
Mapwork	✓	
Graphwork	✓	
Fieldwork	-	-

Table D3.11 d

**Chi-squared tests of independence between selected
cross-tabulated variables
(12th year students)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>12th year course by Aspects of Geography (level of interest)</u>		
History of Geography		✓
Morphology	-	-
Climatology	✓	
Meteorology	-	-
Biogeography	✓	
Geography of Population		✓
Rural Geography		✓
Geography of Industry	-	-
Geography of Commerce and Transport	-	-
Urban Geography	-	-
Economic Geography		✓
Regions and Continents		✓
Portugal	✓	
Other Countries	-	-
Region (where the school is located)	-	-
Mapwork		✓
Graphwork		✓
Fieldwork		✓

District by Aspects of Geography

To like studying different aspects of geography varied from district to district and again they are difficult to explain.

In relation to those aspects of geography for which the chi-square tests of independence gave statistically significant results, examples concerning the districts of Coimbra, Lisboa and Porto are indicated.

More students than expected from the district of Coimbra were interested in studying history of geography; fewer students than expected from the districts of Lisboa and Porto were interested in studying the same aspect.

Fewer students than expected from the districts of Coimbra and Lisboa were interested in doing graph work; more students than expected from the district of Porto were interested in doing this work.

More students than expected from the districts of Coimbra and Lisboa were interested in doing fieldwork; fewer students than expected from the district of Porto were interested in doing this work.

Table D3.12

**Chi-squared tests of independence between selected
cross-tabulated variables
(12th year students)**

Cross-tabulated variables	Significant at 95% level	Significant at 99% level
<u>Relevance of geographical knowledge in day to day life by:</u>		
Schools district location		✓
Age	-	-
Sex	-	-
12th year course	✓	
Future plans	-	-

APPENDIX E

Interview Schedule and Summary of Interviews with Heads of Geography Departments

Document E.1Interview SchedulePROFESSOR DELEGADO DE GEOGRAFIA

Nome.....

Escola.....

Localidade.....

1. Tipo de Escola Secundária

1.1. Escola Secundária com:

	Anos	7 ^a	8 ^a	9 ^a	10 ^a	11 ^a	12 ^a
Ensino diurno							
Ensino nocturno							

Outro tipo (especifique).....

1.2. Número de alunos:

Ensino diurno.....

Ensino nocturno.....

1.3. Ensino da Geografia

	Anos	7 ^a	8 ^a	9 ^a	Área A 11 ^a	Área C 10 ^a 11 ^a	Área D 10 ^a 11 ^a	12 ^a
Ensino diurno								
	Anos	7 ^a	8 ^a	9 ^a	10 ^a	11 ^a	12 ^a	
Ensino nocturno								

2. Professores de Geografia

2.1. Número de Professores Profissionalizados

....

" " " em Formação

....

" " " com Habilitação Própria

....

" " " " Suficiente

....

2.2. Existe na Escola um Professor encarregado da Formação ?

Sim Não

... ..

2.3. Algum (uns) Professor(es) já colaborou em acções de desenvolvimento curricular ?

Sim Não

... ..

Quais ?

2.4. No presente ano lectivo algum (uns) Professor (es) esteve (ram) envolvido (os)
em acções de formação contínua ? Quais ?

2.5. Número de Professores com horário. Diurno ...
Nocturno
Misto ...

3.1. Número de salas de Geografia ...

3.2. A sala de Geografia é exclusivamente usada para o ensino da Geografia?

Sim Não
... ..

3.3. Se respondeu não calcule a percentagem de ocupação da sala (s) por aulas de
Geografia ...%

4.1. Equipamento existente na Escola

.....
.....
.....
.....
.....

4.2. Facilidades de reprografia existentes na Escola

.....
.....

4.3. Existe uma pequena biblioteca destinada ao ensino da Geografia? Sim Não

... ..
.....
.....

4.4. Facilidades de utilização de recursos informáticos nas aulas de Geografia

.....
.....

4.5. Quantia atribuída em 1989-1990 para a aquisição de material destinado ao ensino da Geografia\$00

5. Professor Delegado de Disciplina

5.1. Sexo ...

5.2. Idade ...

5.3. Habilitações académicas.....

5.4. Habilitações Profissionais.....

5.5. Número de anos de ensino

5.6. Número de anos de ensino da Geografia no Ensino Secundário

5.7. Já tinha exercido anteriormente o cargo de Delegado de Disciplina ? Sim Não

... ..

Durante quantos anos? ...

5.8. Já esteve encarregado da Formação? Sim Não

... ..

Durante quantos anos? ...

5.9. Já colaborou em acções de desenvolvimento curricular? Sim Não Quais ?

.....:~::~:~:.....

.....

5.10. Já publicou manuais ou outros livros de caracter pedagógico ou didáctico

Sim Não Quais.....

.....:~::~:~:.....

.....

5.11. No presente ano lectivo esteve envolvido em acções de formação contínua ?

Sim Não Quais ?.....

... ..

.....

.....

5.12. É sócio de alguma associação profissional ? Sim Não

... ..

Qual?

Observações.....

.....

.....

6. Manuais usados

Anos

7ª.....

8ª.....

9ª.....

área A.....

área C.....

área D.....

12ª.....

6.1. Como procederam à selecção de manuais ?

7. Planificação

Como ?.....

Quando ?.....

(Utiliza outras planificações, livros, manuais,.....)

Estrutura

(Modelos)

Finalidades do ensino da Geografia

Gestão de conteúdos

Estratégias e Actividades

Limitações : externas (Inspecção, Direcção da Escola, Pais.....);

internas (Alunos, Tempo, Financeiras, Equipamento, Recursos, Professores,

outras.....).

Avaliação dos alunos

Avaliação do ensino

Desenvolvimento futuro

Interdisciplinaridade

Ligação com outras Escolas

8. Novos programas

Analysaram os novos programas ?

Enviaram as vossas críticas ?

Principais críticas.....

Summary of Interviews with Heads of Geography Departments

Notes - All Portuguese state secondary schools are, since 1975, mixed comprehensive schools, but differ in the number of years, of 'specialist areas' or 'study areas' and courses.

Geography is a compulsory subject in the 7th, 8th and 9th years and optional for the 10th or/and 11th and 12th years of certain areas or courses (except for the course for Technician of the Environment where it is compulsory for the 10th and 11th years; there is only a small number of students following this course). (See Chapters 5 and 6).

In the evening classes (for adults), in the 7th, 8th and 9th years there is no geography and instead there is environmental sciences. In the 10th year there is physical geography and in the 11th year human geography.

The 12th year syllabus is the same for day and evening classes.

Textbooks are chosen by the teachers of one department.

All classes of the same year have the same textbook.

Textbooks are bought by parents (except in cases of lack of financial resources).

Textbooks may be changed every two years.

Textbooks have a large influence on planning and teaching at the instructional level.

There are official syllabuses for each year, 'study area' and course, which contain long term aims, topics, specification of short term objectives and bibliography.

Textbooks are elaborated in accordance with these syllabuses.

Pupils' assessment is done in schools each term.

Since 1985/86 the project 'Minerva' has been functioning with the object of disseminating the use of computers in Portuguese schools, kindergartens (3-6 year old), primary (6-10), preparatory (10-12),

secondary (12-18) and special education schools.

In 1988/89 there were already one hundred and twenty-six secondary schools involved in the project and in 1989/90 this number increased to two hundred and forty-four. By 1993 all secondary schools should be involved in the project.

The project includes the preparation of 28,000 teachers of which 3,000 act as 'animator' and 'expert' teachers ('monitores') (Source: GEP - 'Projecto Minerva' n.d.)¹.

'Since 1989/90 it has become a national project for the introduction, promotion and development of New Information Technology (NIT) in Portuguese Primary and Secondary Education' (GEP - 'Minerva Project', n.d., p. 2).

Interviews

School A

CONTEXT

School Ethos

Pupils at this school live in two boroughs ('freguesias') of the North part of Lisboa.

Large areas of these boroughs have housing in need of repair, council houses of bad quality, houses built without official permission and shanty-town houses.

In one of the boroughs, a large proportion of people are of mixed origin including those from different parts of Portugal and African countries (the old Portuguese colonies).

A large proportion of the people belong to low income groups.

Small areas of these boroughs contrast quite sharply with this, land values are high and have a high proportion of owner-occupiers.

According to the HOD, children of African origin have no special problems in geography classes, but some have poor results in Portuguese. (People from Cabo Verde Islands speak creole at home).

The school is made in prefabricated blocks and is located on one side of a road (that is flooded after heavy showers) in the middle of old farm fields, still with crops and cattle, but soon to become areas of new urban development.

Interview

The interview took place in the school. As well as the HOD the school headmistress ('Presidente do Conselho Directivo') who is also a geography teacher, was also present during part of the interview.

Pupils

It is a school of around seven hundred pupils, from the 7th, 8th and 9th years (Unified General Course) and has only day classes.

Staff

The department has four teachers. They each has an academic degree and training in geography (but one of the teachers had been trained in Brasil and the training had not yet been officially recognized in Portugal).

Two of the teachers have been absent and have been temporarily replaced by a teacher with a degree in anthropology who has no training in geography.

The school headmistress (Presidente do Conselho Directivo) studied curriculum theory in her initial training.

None of the staff has ever participated in curriculum development.

During the school year the headmistress has been away for three weeks on two environmental education courses, held in a University.

Head of department

He is thirty-six years old, a graduate in geography ('licenciatura' - University of Lisboa), trained in geography (1980-1982) and has twelve years in teaching geography in secondary education. He has already been head of department for two years and one term. He had never been involved in curriculum development nor in charge of teacher training. During the school year 1989/90 he has not been on any in-service training course.

He is a member of the Geography Teachers Association ('Associação de Professores de Geografia').

Teaching Resources

There is no specially equipped geography room, but there is in the school, a diversity of resources available for geography teaching, such as: overhead projector, slide projector, projector of printed material, video, tape-recorder, wall maps, ordnance survey maps, geological maps, physical maps, thematic maps, globe and black globe, meteorological equipment, compasses, samples of minerals and rocks.

The school has reprographic facilities for assessment tests and other teaching materials.

There is a small geographical library, which contains textbooks, some scientific books, specially addressed to young people and other books mainly specialist books in geography.

There is no microcomputer in the school.

The departmental allowance in 1989/90 was ten thousand escudos (about thirty-eight pounds).

Textbooks

The same textbooks has been used for the last two school years (1988/89 and 1989/90). The HOD and the headmistress would like to change them because according to their opinions, there are other better textbooks. When both arrived at the school they found that the rate of pupil failure was high (they have to remain in the same class for a further year or more). Results in geography were also poor.

Due to the fact that high percentages of pupils stayed in a form a second (or even a third) year, they did not change textbooks for financial reasons (parents of pupils who stayed in the same form would be obliged to buy another textbook).

The pupils overall results were much better in the last school year (1989/90).

The members of the geography department then chose a 'new' textbook for the 7th form.

According to the HOD and the headmistress, the 'new' textbook is published with two auxiliary books: a teachers' guide and a pupils' activities book and gives suggestions of teaching strategies.

Because of these advantages they chose it.

The Planning Process

At the beginning of the school year what is usually called 'long-term planning' (planning for the whole school year), was undertaken.

The geography staff decided which topics were to be studied in each term and the sequence of study.

All the geography teachers were to teach the same topics in each form, in each term.

There were also quarterly meetings to co-ordinate the study of the topic chosen for the term (medium-term planning).

The sequence of topics prescribed in the official syllabuses was modified. For instance in the 7th year climate was studied before relief. Due to the fact that the syllabus was too vast and often impossible to cover, teachers started with the study of climate (instead of relief) since it was necessary for the study of the geography of Portugal in the 8th year (In fact one teacher did not finish the study of relief).

The headmistress thought it was important study relief e.g. the study of the morphology of the area where the school is located and to the flood problems already mentioned.

In the 8th and 9th years the sequence of topics prescribed in the syllabuses was not followed. For example in the 9th year industry and cities were studied

before agriculture, because teachers thought that the study of the two first topics was more important for pupils living in an urban area.

Books on curriculum theory were not used for planning and the headmistress who learned curriculum theory in training, thought that the content of the course was unconnected with the realities of practical teaching.

Both teachers said that in teaching geography they always have in mind, the relevance of what they teach to the pupils in order to provide something useful for their future lives, given the realities that they have to face.

Influences on planning and teaching

The Inspector of the area exerts no influence on the teacher's planning. In the previous year he intended to exert influence on pupils' marks (asking for a modification of the assessment criteria) but in fact the results in geography were better than in other subjects.

There is no parental pressure on teaching. One teacher asked for their collaboration for a study of the local area, and they were very helpful.

Constraints

A large proportion of parents have low incomes and have had no more than an elementary education.

This has influenced the pupils' cultural background and parents are unable to give them academic help at home. Some parents think that secondary schooling is not relevant for their children's future, but they are obliged to send them to school.

Another constraint is the time allocated in the timetable for geography teaching (two periods/week in 7th and 9th years, three periods per week in 8th year). The time allocated for geography teaching is not enough to cover all syllabus content, specially in the 7th year.

The amount of school and departmental allowances is very low and was also felt as a constraint. (The headmistress mentioned that she would like to buy a microcomputer).

In the school it is not usual to have teachers without academic qualifications

in geography. The teacher with an anthropology degree (he replaced successively two other teachers) did not have adequate preparation in geography and expressed the idea to other teachers that geography was useless!

Teaching activities

Teachers during the school year 1989/90 did not organize any outdoor activity together (this was the case in previous years). In fact only the headmistress collaborated with the history teacher in the organization of a study visit for the 7th year, pupils did landscape observation and orientation exercises and practised in the use of map scales.

The headmistress organized an environmental education project for one 7th year class in collaboration with the biology, arts and Portuguese teachers.

Project work will go on during the next school year with the collaboration of the history, arts and Portuguese teachers (the biology teacher left the school).

The HOD did some interdisciplinary work with a biology teacher.

The headmistress has a project of work with a preparatory school of the area and with a primary school for the next year.

Assessment

Pupil assessment is not done in collaboration, each teacher does the assessment of his/her pupils.

Evaluation

The courses are evaluated at departmental meetings.

Teachers were happy with the planning done during the year.

Syllabuses

Beyond the fact of syllabuses being too vast, the HOD mentioned the difficulties of 7th year pupils in understanding concepts such as latitude and longitude.

At the beginning of the school year 1990/91, new syllabuses would be on a trial in secondary schools. The new syllabuses (in July 1990) had not yet been sent to this school, teachers did not know what they contained. Teachers were against the fact that according to the new education reform, geography would be taught in the 7th and 9th years and not in the 8th year.

The headmistress said that she liked to teach the same pupils in the 7th, 8th and 9th years and this would no longer be possible. Pupils would forget in the 8th year what they had learned in the 7th year. Serious difficulties would arise in the 9th year.

School B

CONTEXT

School Ethos

The school is located in a suburban area with, in the last decades, a rapidly increasing population whose origin is from different parts of Portugal.

Located in the immediate vicinity of Lisboa a large majority of its active population works in the capital. There is a high proportion of owner-occupiers and, in spite of increasing land values, the number of blocks of flats is still growing.

The researcher worked in the seventies in a secondary school in Lisboa where there were a large number of pupils from this suburban area. They were obliged to attend a secondary school in the capital due to the lack of facilities in their area of residence.

Interview

The interview took place at the interviewer's home.

Students

It is a school of around three thousand students (half attending day classes and another half evening classes). The school has day and evening classes for all secondary education years (7th to 12th year of schooling).

Geography teaching

Geography during the day is taught in the 7th, 8th and 9th years.

In evening classes, in the 7th and 8th years there is environmental sciences and geography in the 10th, 11th and 12th years.

Staff

The department has thirteen geography teachers, all with an academic degree in geography, eight have training in geography, four are undergoing teacher training in geography and one has no training.

There is a teacher in charge of teacher training in the school.

Seven teachers teach day classes, five teachers evening classes and one teacher, day and evening classes.

None of the staff has ever participated in curriculum development.

Only the HOD has been to two in-service courses, during the school year 1989/90.

Head of department

She is thirty-four years old, a graduate in geography ('licenciatura' - University of Lisboa), trained in geography (1986-1988) and with a total of fourteen years in teaching, seven in geography. She has already been head of department. She has never been involved in curriculum development nor in charge of teacher training. During 1989/90 she attended two (half a day) in-service courses organized by the Geography Teachers' Association. She is a member of this Association.

Teaching Resources

There are two rooms allocated for geography teaching in the school, but these rooms are not exclusively used for geography classes (only about 75% of the time). There is another small room used to keep the geography teaching resources.

There is an overhead projector, a slide projector, a video-recorder, tape-recorder, wall maps, ordnance survey maps, plans, atlases, globe, hygrometer,

synoptic maps, compasses and samples of rocks and minerals in the school.

The school has reprographic facilities for assessment tests. The reproduction of other teaching materials must be paid by pupils or by teachers.

The school has no small library with geographical works, there are only a few textbooks.

In the school there is in the school the 'Minerva' project and it is possible to use microcomputers for geography teaching.

Nevertheless, geography teachers have not been given any priority in attending computer courses, and this is an obstacle to efficient use of microcomputers in geography classes.

The departmental allowance in 1989/90 was thirteen thousand escudos (about fifty pounds). This amount of money will be spent on specialist books in geography.

Textbooks

At the end of the school year 1989/90, geography teachers chose another textbook for the 7th year. According to the teachers' opinion, the one used until then was too difficult for pupils.

The 12th year teachers also chose another textbook but the HOD did not know the reasons.

The planning process

During a meeting that took place at the beginning of the school year it was decided that the 'long term planning' would be done by groups of teachers according to the years they taught.

One group included the teachers in charge of teaching the 12th year, another, those in charge of the Complementary Course (10th and 11th years). (In both cases, concerned evening classes).

The HOD would be in charge of doing the planning of the 7th, 8th and 9th years (day classes).

She did the 'long term planning' of these years, with the teacher in charge of teacher training and with the teachers undergoing teacher training. Two teachers were not present at the meeting because one was away attending an in-service course and there was a post of geography teacher vacant. (Later on a teacher without training in geography was appointed for this post).

This 'long term planning' included the definition of general objectives, the division of topics by terms and suggestions of teaching strategies.

The study of geography in the 7th form started with the recognition of the local environment, followed by a study of relief and of world bio-climatic environments.

In the 8th year, the study of the geography of Portugal started with the study of regional asymmetries (teaching strategy - group work), followed by the study of the local environment (teaching strategy - project work).

In the 9th year the study of world population was followed by that of cities and of social and economic contrasts of the world of today (teaching strategy - project work).

Thus the sequence of topics indicated in the official syllabuses was not followed. Each teacher followed the same sequence of study of topics, but could choose the strategies more appropriate for his/her pupils (and not the suggested ones).

Latterly the head of the department and the teacher in charge of teacher training did a more detailed planning and together elaborated teaching materials (they did the training in geography at the same time and like to work together). Some of these materials were used by other teachers.

The HOD gave special support to the teacher without geography training.

Books on curriculum theory were not used for planning. The HOD learned curriculum theory during training, but said that the course was unconnected with the practical realities of teaching. For her the most important part of teaching training in geography was the teaching practice. The teacher in charge of her training introduced her to new teaching strategies specially to project work, but the use of new strategies of teaching was based on a theoretical understanding of the purpose of the new strategy. Until doing the geography training, in curriculum planning she put the emphasis on objectives, now she put the emphasis on procedures.

According to the HOD she always has in mind, the aims of geographical

education, the fact that pupils should develop their spatial perceptions, acquire basic geographical knowledge needed for future studies and she is less concerned with the attainment of a high number of specific objectives.

The school had chosen a 'global plan' of study - "Human Rights". In the 9th year the study of the socioeconomic contrasts in the world of today was linked with that of Human Rights.

The HOD indicated the difficulties of planning with the collaboration of all the geography teachers, specially due to the fact that some teachers give classes in the morning, others in the afternoon, and others in the evening, and that there are big differences between day classes (addressed to children) and evening classes (addressed to adults).

Influences on planning and teaching

The Inspector does not exert influence on planning, he/she is essentially concerned with assessment criteria.

Some parents gave support to group and project works, others not, because this kind of work is demanding of time.

Constraints

The main constraints were an insufficiency of financial resources; some teachers had too many different years and classes; and some pupils had learning problems and a lack of basic knowledge. Nevertheless the head of department adapted teaching and assessment to pupils' abilities.

Teaching activities

The HOD organized with the teacher in charge of teacher training, a study visit of the county ('concelho') where the school is located. One 8th year class of each teacher participated in the visit.

With the same teacher she organized a study visit to a limestone area ('Maciço Calcáreo Estremenho'). Two 8th year classes (one of each teacher) participated in the visit. The teachers undergoing teacher training went along to observe.

In classes the head of department uses different strategies (group work, project work, games, simulations, role-play).

She tried to do interdisciplinary work with a history teacher in the 9th year.

Assessment

Usually teachers do two tests a term. They do essentially a summative assessment. According to the HOD, other types of assessment, namely a continuous assessment, is difficult due to the small number of teaching periods per week (two in the 7th and 9th years).

The HOD and the teacher in charge of training elaborated the assessment tests addressed to their pupils together.

Evaluation

Evaluation consists essentially of a review of work undertaken with the pupils, to find out whether teachers have covered the syllabus or not.

Syllabuses

The 7th year syllabus contain some topics which are too difficult for the pupils' age. For example pupils do not understand some concepts concerning the study of the atmosphere.

The worst results are in the 7th year, due to the syllabus being unsuitable for the pupils, the amount of content to be covered and the small number of teaching periods per week.

Teachers never completed the 7th year syllabus.

The HOD finished the study of the 8th and 9th years topics because she gives more importance to processes than to the attainment of a high number of specific objectives.

The new syllabuses were not sent to this school and consequently teachers did not analyse them. They only knew the new curriculum organization for basic and secondary education.

School C

CONTEXT

School Ethos

The school is located in an old area of Lisboa. Until 1974/75 it was a boys grammar school ('liceu'), one of the oldest and with traditions in Portuguese secondary education. The school building is from the 19th century.

Interviews

The interview took place at the head of department's home.

Students

It is a school of around two thousand students (one thousand and five hundred, day classes; five hundred, evening classes).

The school has day classes from the 7th to the 12th years and evening classes from the 8th to the 12th years. There are also in the school technical courses ('cursos técnico-profissionais').

Geography teaching

Geography during the day, is taught in the 7th, 8th and 9th years, in the Complementary Course (area of study D) and in the 12th year.

In evening classes geography is taught in the 8th, 9th, 10th, 11th and 12th years.

Staff

The department has ten teachers, eight with an academic degree in geography, four with training in geography and four undergoing teacher training in geography. The other two teachers have a degree in anthropology and haven't undertaken teacher training.

There is a teacher in charge of teacher training in school.

Eight teachers have day classes and two evening classes.

The teacher in charge of teacher training participated in the elaboration of syllabuses addressed to technical courses ('cursos técnico-profissionais').

During the school year the HOD attended four in-service courses, another teacher one course (courses organized by the Geography Teachers' Association) and the teacher in charge of teacher training had been in charge of one course.

Head of department

She is thirty-nine years old, graduate in geography ('licenciatura' - University of Lisboa), trained in geography and with a total of sixteen years in teaching geography. She has already been head of department for eight years.

She has never been involved in curriculum development or in charge of teacher training.

She is a member of the Geography Teachers Association.

Teaching Resources

There is one specially equipped geography room that is exclusively used for geography teaching in the school.

In the geography department there is an overhead projector, a slide projector, a projector of printed material, wall maps, ordnance survey maps, globes, geological maps, several thematic maps, maps in relief, atlases, meteorological equipment (but old), synoptic maps, compasses, planetarium. In the school there is a video-recorder, tape-recorder and samples of rocks and minerals available for geography teaching.

In the school there are a few microcomputers but they are not available for geography teaching because they are reserved for the teaching of computer science.

In the school there is a small library for geography teaching with textbooks and some specialist books in geography (which can be consulted by teachers and students). The department subscribes regularly to the Geography Teachers Association magazine.

The school offers reprographic facilities only for assessment tests. Other teaching materials must be paid for by pupils or teachers.

The HOD did not know the exact amount for departmental allowance, but she bought four atlases, three maps and several books during the school year.

Textbooks

Textbooks are chosen in departmental meetings by consensus or by means of a vote.

This year according to the official legislation it was only possible to change the 7th and 10th years textbooks.

There was a consensus to maintain the 10th year textbook. In relation to 7th year one, some teachers expressed the view that the text was sometimes confusing, some diagrams were not adequate for the topics and in some cases were not adapted to pupils' age. Nevertheless the majority of teachers voted for maintaining the same textbook.

A textbook was not chosen for the 12th form, teachers gave notes and indicated a bibliography to be consulted by students.

The planning process

At the beginning of the school year the school's Directive Council ('Conselho Directivo') organizes a calendar for departmental meetings.

During the geography departmental meeting the dates of meetings are fixed by school years that is, only with the participation of teachers who have classes of a certain school year.

The head of department is present at all these meetings as a co-ordinator, a moderator and to give advice to inexperienced teachers. She said this is concerned with the articulation between the different school years, because some topics (for instance, agriculture, industry, cities) are studied in the Unified General Course and in the Complementary Course. It is necessary to give adequate development to the study of each topic according to the general objectives of each course. She is also concerned with the sequence of study of the different topics.

During these meetings a 'long-term plan' is done for the whole school year,

this included the definition of general objectives and the sequence of study of topics and suggestions for teaching strategies and resources adequate for each topic.

In the same meeting or afterwards a medium-term plan for the first term is done and indicated the teaching strategies and resources for each teaching unit.

The planning is done before teachers know the classes and some modifications can be introduced later.

The teacher in charge of teacher training and the teachers who were undergoing teacher training also introduced alterations to the initial planning.

Any alteration, done by any teacher is made known to the head of department.

In some cases the sequence of study of topics indicated in the official syllabuses is not followed.

Sometimes an overall topic is chosen to integrate different syllabus topics, for example, regional asymmetries and their explanation in the study of the geography of Portugal in the 8th year.

The head believes that the use of different teaching strategies during the school year is convenient because different strategies will contribute to developing different pupils' capacities, as well as pupils could 'observe' the geographical realities in different ways.

The suggestion of teaching strategies include for example: group work, project work, slide projection, pupils' oral expositions, the use of tests and so on.

The possibility of adapting teaching to pupils' interests is also taken in account.

Sometimes teachers produce teaching materials together.

In the plan prime importance is given to the aims of geographical education.

Influences on planning and teaching

The Inspector does not influence curriculum planning.

One of the previous inspectors organized a meeting to indicate to heads of departments their duties and asked to see the department files but did not make any remark.

The school's Directive Council does not influence curriculum planning.

In the school there is a 'global plan' of study ('Plano global de Escola') which was in 1989/90 'To be Portuguese' ('Ser Português') and a 'cultural week' is organized annually.

The head of department did not show evidence of the influence of this plan in her curriculum plan. Nevertheless, geographical works were exhibited during the cultural week.

The HOD said that sometimes she asked for the collaboration of the school Directive Council to solve pedagogical problems related to inexperienced teachers.

The parents do not influence curriculum planning but usually give support to children's activities.

Constraints

The pupils' level of abilities is sometimes a constraint on the employment of certain teaching strategies.

The 7th year syllabus contains many abstract concepts, some too difficult for twelve, thirteen years old pupils and there are no teaching resources to help them to understand these concepts (for instance, videofilms).

Another constraint is the insufficiency of time, mainly in those years with two teaching periods per week (7th and 9th years).

In the 7th year whose syllabus includes too much content to cover and in classes with a large number of pupils of low ability, it is necessary to adapt teaching in order to attain objectives. In these cases it is impossible to cover the whole syllabus.

Insufficiency of time for department meetings, due the fact that teachers have classes at different hours is also a constraint. The number of departmental meetings during the school year is not enough to allow for a more detailed plan to be made with the participation of all teachers.

There are also financial constraints which prevent teachers buying resources and organizing study visits (sometimes parents are asked to contribute money for this purpose).

The HOD would like to have another geography room, but there are subjects without any specially equipped room.

She would also like to have a small room for departmental meetings and for teachers to work together.

The problems concerning reprographic and computer facilities have already been mentioned.

Another constraint is the fact that every year there are teachers without academic qualifications in geography and without training in the subject.

The HOD gives a special help to these teachers, indicates bibliography, advises strategies and in some cases is obliged to do a detailed teaching plan together with the teacher.

Teaching activities

It is usual for teachers to organize study visits together.

In the school year 1989/90 the HOD who had only 10th and 12th year classes organized only one study visit to the City Museum ('Museu da Cidade') for the 10th year, because other teachers would have complained if more visits had been undertaken, as they would have been unwilling to lose their classes.

For the 12th year she planned three study visits, one to the Geographical Society (to observe the evolution of cartography); another to the Agriculture Institute (in order to observe agricultural activities without spending money on transport. The Institute is in Lisboa, but has large areas with crops and cattle); the third visit, to a factory (this did not take place because the factory did not send the needed permission in time). After the visits students did a report.

Other teachers organized study visits and often the HOD was invited to participate in the visits.

Teaching strategies used in the department included, for instance, project work (two years ago, 10th year students did a project work on the consequences of the fire which occurred in Lisbon's old city CBD), group work, role-play, games, students prepared topics and communicated them to the rest of the class.

In 1989/90, the teacher in charge of teacher training and the teachers undergoing teacher training organized a project named 'Atlas'.

During the school year, 9th year pupils constructed atlases which were exhibited during the cultural week.

Sometimes geography teachers asked for the collaboration of other teachers of the same class, namely in mathematics, physics, geology in order to explain in greater depth aspects connected with geographical ones, as well as geography teachers organized study visits with other subjects teachers, namely with the history teacher.

Assessment

Teachers do pre-tests at the beginning of the school year or before starting a teaching unit, formative tests and summative tests. In a departmental meeting held before the end of each term, the assessment criteria are discussed.

Evaluation

During each term the initial planning is altered according to the development of the teaching process.

At the end of the school year teachers who were not able to cover the whole syllabuses have to indicate the topics they did not cover. This is compulsory and is necessary for next year's planning.

Usually teachers like teaching the same pupils in the 7th, 8th and 9th years. This is possible in this school.

Syllabuses

It has already been mentioned that it is very difficult to cover the whole syllabus, specially in the 7th year.

The new syllabuses were not sent to this school and geography teachers were not able to analyse them. The HOD was able to examine the new syllabuses at the Geography Teachers Association Annual Meeting.

She is against the fact that geography will not be taught in the 8th year and against the linkage of geography and economics in the 12th year, both preconized in the new curriculum organization for the 8th and 12th years of schooling.

School D

CONTEXT

School Ethos

The school is located in an upper middle class residential area. It was a girls grammar school ('liceu') until 1974/75 and like the previous one, a school with traditions in Portuguese secondary education.

The building dates from 1933.

Interview

The interview took place in the school staff room.

Students

It is a school of about two thousand, eight hundred pupils (two thousand one hundred day classes, seven hundred evening classes).

It is a school with all the secondary education years (from 7th to 12th, day and evening classes).

Geography teaching

Geography in day classes is taught in the Unified General Course (7th, 8th and 9th years) in the Complementary Course ('study areas' C and D) and in the 12th year; in evening classes in the 7th and 8th years there is environmental sciences; in the 10th, 11th and 12th years geography.

Staff

The department has fourteen teachers.

Eleven teachers are graduates in geography and three in anthropology.

Seven teachers have training in geography, four were undergoing teacher training and three have no training (those graduates in anthropology).

There is a teacher in charge of teacher training in the school.

Ten teachers have day classes and four evening classes.

Two teachers have already been involved in curriculum development.

Head of department

She is fifty-one years old, a graduate in geography ('licenciatura' - University of Lisboa), trained in geography, with a total of twenty-seven years in teaching, seventeen in geography. She has already been head of department for six years, in charge of teacher training for five years, and published in collaboration, textbooks for the Unified General Course (7th, 8th and 9th years), for the Complementary Course ('areas of study' A and D) and for the 12th year. Some of the textbooks also have auxiliary books: practical exercises for pupils and teachers' guide.

She is a member of the Geography Teachers Association.

Teaching resources

There are two geography teaching rooms and another small room for departmental meetings or for teachers to work together. The teaching rooms are exclusively used for geography classes during the day but not in the evening.

There is a variety of teaching resources, including some meteorological ones and a small geographical library in the department.

There are only reprographic facilities for assessment tests, the reproduction of other materials must be paid for.

In 1990/91 it will be possible to use computers for geography teaching. The school will be involved in the 'Minerva' project.

In 1989/90 all the departmental allowances were spent in the acquisition of video equipment, available for all departments.

Textbooks

For 1989/90 two or three teachers suggested that another textbook be chosen for the 9th year, but by means of a vote, teachers decided to maintain the existing textbook. The one suggested by two or three teachers was well printed but it did not follow the sequence of topics prescribed in the official syllabus and some data and maps were out of date and the sources were not indicated.

For 1990/91 a new physical geography textbook was chosen for the Complementary Course. It was chosen by the teachers who taught the 10th year in evening classes.

The planning process

At the beginning of the school year the long-term planning by school years was done.

The syllabus content was divided into three parts, one part for each term. An estimate was made of the number of periods required to teach each topic. Further, the general objectives for each year were defined.

Teachers undergoing teacher training were in charge of the majority of the 7th and 9th year classes and worked together with the teacher in charge of teacher training.

They defined specific objectives, chose strategies and resources for each teaching unit, organized teaching activities and evaluation procedures.

The 8th year teachers, as well as the 12th year teachers, also worked together.

There was only one class of the 'study area' C of the Complementary Course. The teacher in charge of the human geography worked together with the teacher in charge of the thematic cartography of the same area.

There was only one class of the study area D of the Complementary Course. The teacher tried to work together with the teacher in charge of the 11th year (evening classes), but due to the number of teaching periods being different, the planning became difficult.

In some cases the sequence of study of topics prescribed in the official syllabuses was not followed.

Nevertheless, the HOD, in one case, said that because this was a class with a small number of students and they had poor marks, she followed the sequence of topics prescribed in the syllabuses.

Sometimes an overall topic was chosen to integrate the different syllabuses topics. In the case of the 8th year, teachers planned their course in order to show evidence of physical and human contrasts of Portuguese territory.

The textbooks contain at the beginning of each teaching unit suggestions for planning which include the definition of general and specific objectives. Some teachers used them, namely in the 8th year.

According to the HOD the aims of geographical education were always taken into account.

To know more details about the work done by teachers in the 7th, 9th and 12th years, the head advised the researcher to contact the teacher in charge of teacher training.

Influences on planning and teaching

The Inspector does not exert influence on planning.

Parents give support to teaching activities (they give money for photocopies and for study visits).

Constraints

There are financial constraints.

Reprographic facilities can only be used for assessment tests.

Teachers without academic qualifications and without teacher training in geography can be a constraint.

The Inspector advised the head to ask these teachers for detailed plans of their courses, in order to make it possible to give them effective help.

This year one teacher, without qualifications in geography did good work. Two years ago another teacher caused serious problems.

Pupils with different levels of ability are also a constraint.

Teaching Activities

Teachers often organize teaching activities together.

In 1989/90 a study visit to a small mountain was organized to study its physical and human aspects. All the 8th year classes went on the visit (a total of twelve classes, and ten teachers of different subjects). Pupils had activities to do at each stop. Later on, they worked in group in classroom and did a report.

Geography teachers use different teaching strategies, such as project work (mainly the teachers who are undergoing teacher training), group work, individual work (not often), games, role-play.

The school has a two year global plan, the links between the school and the environment were stressed.

Every year a cultural week is organized. This school year geography teachers organized orientation exercises, a quiz game and pupils work was exhibited.

There is co-operation with teachers of other subjects: history (mainly study visits organized in collaboration), arts (for cartographic representations), biology and sometimes Portuguese.

Nevertheless there are difficulties because different subject syllabuses are not articulated to harmonize with one another.

Assessment

Usually two or three tests each term are done. Teachers develop their own tests individually.

When pupils do group work they do their own evaluation and evaluate their colleagues.

Evaluation

At the end of the school year teachers indicate if they have covered or not the whole syllabuses.

Syllabuses

It is difficult to cover the whole of the 7th year syllabus.

According to the HOD this happens not because the content is too difficult for pupils' capacities but because they are allocated only two teaching periods per week for geography in the 7th year.

Sometimes there are also difficulties in the 8th form caused by the fact that the whole of the 7th year syllabus is not covered (it have to be completed in the 8th year).

The new syllabuses were not analysed.

The HOD was called for an official meeting to give her opinion about the new 10th and 11th years syllabuses. The syllabuses were sent to the school three days before the meeting and were incomplete. Due to personal reasons, the HOD did not attend the meeting.

Other new syllabuses were not sent to the school; the HOD had access to them in the Geography Teachers Association Annual Meeting and through her publisher.

Another group of teachers had been in charge before of elaborating a new geography syllabuses. (This group was dismissed and a new group of teachers elaborated another syllabuses).

The teacher in charge of teacher training was chosen as a consultant by the first of these groups. She asked the geography staff to analyse the syllabuses. A group report was elaborated.

The geography group is against the abolition of geography teaching in the 8th year.

In order to complete the interview about geography teaching in school D, an interview was done by telephone with the teacher in charge of teacher training.

She is a very experienced teacher with about twenty-five years in teaching geography and several years in charge of teacher training.

She was asked questions about planning at 12th year level.

She explained that in 1988/89, three teachers in charge of the 12th year worked together, they planned the course together, defined objectives, chose strategies and resources, produced materials, organized study visits.

In fact they modified the sequence of content prescribed in the official syllabuses.

Firstly they started by organizing group work. Students were asked to indicate the sequencing of cartographic representations (teachers gave them some texts-keys and photocopies of maps of different periods). Secondly instead of following the official syllabus that prescribes the study of cartographic and statistical bases of geographical analysis, they applied these basic concepts to the study of rural, industrial and urban spatial organization.

They organized two study visits together, one to a new industrial area and another to the historical centre of Lisboa.

The evaluation of students learning was also planned by the three teachers together.

Teachers intended to improve the planning done in the previous school year in 1989/90. Due to health reasons the teacher in charge of teacher training was not able to do this, and the teachers in charge of the 12th year went on using the same planning and materials done in 1988/89.

In January 1989 the school presented a project to the 'European Youth Parliament' which won the second prize at EEC level. The topic was 'Europe in the face of the Third World'. The work was done by twelve students of the 12th form and was guided by two teachers, one of them was the teacher in charge of teacher training. The work included a written part and a videotape.

Schools E, F, G and H

CONTEXT

Schools E, F and G are located in Évora.

Évora is the capital of the district, and the city's origins date from the Roman occupation of Portugal. Its historical architectural and urban heritage make Évora the 'jewel in the crown' of Portuguese cities.

The district is essentially rural and it is the Portuguese district with the biggest average size of holdings (46.9 hectares) (Cavaco, 1986, quoted from Medeiros, 1987).

Évora had 34,851 inhabitants in 1981 and is essentially a centre of commerce and services and has an important cultural function.

School H is situated in the same district, in a small historical town, located in an important area of marble quarries.

The interviews of the heads of the geography department of the schools E, F and G took place in a teaching room of school E.

The interview H took place in a cultural centre of a small town where the head of the geography department of school H lives.

School E

Before Portuguese secondary education became comprehensive, school E was a grammar school ('liceu') well-known and with old traditions.

The school was in the old University building, but in order that the University might reoccupy its old premises, a new establishment outside the city walls was built.

It is a construction of several separated blocks, with a very agreeable appearance, but the school is situated near a noisy road which gives access to the city.

Students

The school has one thousand, eight hundred and ninety-seven students (one thousand, seven hundred and eighty-six - day classes and one hundred and eleven - evening classes).

The school has the Unified General Course, the Complementary Course and 12th year during the day. In the evening there are only the three first years of secondary education.

Geography teaching

Geography in day classes is taught in the 7th, 8th and 9th years, in the 10th

and 11th years ('area of study' C) and in the 12th year.

The HOD said that in previous years there were also geography courses for the 'study areas' A and D of the Complementary Course.

Staff

The department has seven teachers, five graduates with training in geography, one graduate in sociology and another in landscape architecture. The two last ones have no training in geography.

Five teachers have day classes and two teachers day and evening classes.

Head of department

She is fifty-three years old, a graduate in geography ('licenciatura' - University of Lisboa), trained in geography (1979-1980), with fifteen years in teaching geography (fourteen in secondary education) and has already been head of department for nine years.

She belongs to a group of teachers in charge of in-service training.

In 1990/91 she will be involved in the implementation of the new education reform in five schools located in the districts of Évora and Beja (four state schools and one private).

She is a member of the Geography Teachers Association.

Teaching Resources

In the school there is one very good specially-equipped geography teaching room that is not exclusively used for geography teaching (about 80% for geography teaching and 20% for other subjects).

In the department there is a wide variety of teaching resources including a small library with textbooks, atlases and some specialist books in geography. The department subscribes to the magazine 'Finisterra' published by the Geographical Studies Centre of the University of Lisboa ('Centro de Estudos Geográficos da Universidade de Lisboa').

The HOD complained that geography teachers could only have limited use of the overhead projector.

The school offers reprographic facilities for tests and only for a few more teaching materials. The rest must be paid for.

There are computer facilities because the school is involved in the 'Minerva' project and in 1990/91 will be involved in the new project IVA.

She does not know the amount of departmental allowance for 1989/90.

Textbooks

No changes in the textbooks used were decided. Due the fact that the new syllabuses for the 7th and 10th years would be on trial in this school in 1990/91, and there were not yet any textbooks written in accordance with the new syllabuses, other textbooks were not chosen.

Information about the new syllabuses would be developed.

Planning process

Teachers used the plan sent to schools by the DGEBS that includes the number of teaching periods needed for each teaching unit and modified it according to the pupils' ages and economic-social level.

At the beginning of the school year the content was divided into three parts and one third was allocated to each term.

Usually the content order prescribed in the syllabuses is followed, nevertheless in the 9th and 12th years, sometimes the order was modified. The last topic prescribed in the 9th and 12th years syllabuses is the organization of urban space. Sometimes teachers preferred to approach this topic in the first place or they linked its study with that of the organization of industrial space.

Influences on planning and teaching

The Inspector does not influence planning nor the school's Directive Council.

Parents, neither influence planning and they leave the problems concerning their children's instruction to the teachers (they rely on teachers).

When they are asked they give financial aid for study visits or for photocopies.

Constraints

One of the most important constraints for planning and in the organization of different teaching activities is the difficulty for teachers to meet together, because some of them have classes in the morning, others in the afternoon and others in the evening. In the timetable there are no fixed hours for departmental meetings and they have no room ascribed for geography meetings.

Each teacher is in charge of too many classes.

The 12th form students who chose geography as an option are often not well prepared (their mathematical knowledge is not enough, they have difficulties in Portuguese interpretation and oral expression because they did the previous schooling years in small towns where the teacher in charge of one subject could change five or six times during one school year. The majority of students in the 12th year last studied geography in the 9th year and not in the 10th and 11th years.

Teachers without academic and training qualifications are also a constraint and due to the problems quoted above, the HOD have difficulties in meeting and helping them.

There are financial constraints for study visits and photocopies (but the HOD said that students do not necessarily read the photocopied material they are given and therefore teachers should be parsimonious with the use of photocopies).

Teaching activities

There are financial problems in organizing study visits and in the school, priority to other subjects, namely technical ones, has been given.

The HOD with 12th year students organized visits to see urban aspects of Évora, to see the new residential areas around the city and to undertake map orientation activities (they used buses belonging to the police force).

Geography teachers together organized a 'Geography Week' which in-

cluded: conferences - a person in charge of the Urbanization Plan and the Plan of the area of Évora was invited. ('Plano de Urbanização' and 'Plano Director Municipal'); a projection of films of geographical interest; an exhibition of a diaporama about cities elaborated by geography teachers and an exhibition of pupils' work.

There were great difficulties in doing interdisciplinary work. The 'School Global Plan' ('Plano Global de Escola') included a global topic to be approached by different subjects: 'Science, Culture and Food', but the activities were developed by subjects (a 'Geography Week', an 'English Week', a 'German Week').

The school has teachers of different subjects undergoing teacher training. These groups organized their own group activities.

A work group to implement interdisciplinary projects was created in the school by the 'Pedagogical Council' ('Conselho Pedagógico'). The HOD belongs to the group in charge of this implementation but it became impossible to implement interdisciplinarity.

Assessment

Each teacher elaborates his or her own assessment tests.

The HOD hopes that the new reform will give teachers the possibility of working together.

Evaluation

At the end of the year the questionnaire sent by the DGEBS is filled in. In the questionnaire, the years and forms where the teachers did not complete the official syllabuses and the reasons why they did not complete them are indicated.

Syllabuses

Pupils from the 7th year have difficulties in learning some concepts linked to the study of the atmosphere or maps scales.

There is not enough time to complete the 7th year syllabus and often teachers did not complete the study of cities in the 9th year.

The HOD was chosen as consultant for the new syllabuses and went to Lisboa to an official meeting held at the ME.

She brought the proposals of the new syllabuses and invited the geography teachers of other secondary schools of Évora to participate in an analysis of these syllabuses. One school sent a teacher, the other did not.

They analysed the new syllabuses and sent a document to the group in charge of designing the syllabuses. The main criticisms concerned institutional problems of putting into practice the new reform (a large number of pupils per class; each teacher is in charge of many classes - eight, nine, ten; great difficulties for teachers to meet together).

They also criticized the fact that geography teaching would be omitted from the 8th year.

School F

Before it become a state comprehensive school it was a private catholic school.

The school building offers good conditions and was enlarged recently.

It is a more traditional construction than that of school E, because it is a single block with green spaces around.

Many pupils are from the outskirts of Évora, from rural areas and their parents have low incomes.

Students

The school has only day classes, from the 7th to 12th years, including a technical course.

The school has about one thousand, two hundred students.

Geography Teaching

There is only geography teaching at Unified General Course level (7th, 8th and 9th years).

Staff

There are five geography teachers in the department. Two graduates with teacher training in geography; one graduate in history, one graduate in sociology, one with the third year of the history course, all three without teacher training in geography.

One of the graduate teachers with teacher training in geography belonged to the School Directive Council, and as a result had less time to spend on her department and her classroom teaching.

Head of department

She is thirty-nine years old, a graduate in geography ('licenciatura' - University of Lisboa), trained in geography (1979/80) with a total of eleven years in teaching geography.

She has already been head of department for three years.

In 1989/90 she has been away on an in-service course on Environmental Education (subsided by the EEC) and attended a course organized by the Geography Teachers Association.

In 1990/91 she will be involved in the implementation of the new education reform. She will work with the head of department of school E.

Besides geography, she has taught cultural anthropology in the last two school years.

She is a member of the Geography Teachers Association.

Teaching resources

The school has a specially equipped geography teaching room that is only used for other subjects when there are no geography classes using it.

In the department there are a variety of teaching resources including a small library which has only textbooks, atlases and some specialist books in geography addressed to young people.

The school offers reprographic facilities for tests and for a few other teaching materials.

There are computer facilities because the school is involved in the 'Minerva' project and there is a 'Scientific club'.

The departmental allowance in 1989/90 was ten thousand escudos (about thirty-eight pounds). This amount was used on the acquisition of maps.

Textbooks

In 1988/89 and 1989/90 teachers chose new textbooks for the 7th, 8th and 9th years. The chosen textbooks have in the annex, exercises for pupils to apply knowledge acquired in classes, exercises that can be done in the classroom or at home.

Due to the insufficiency of reprographic facilities it was convenient to have textbooks with exercises.

Planning process

At the beginning of the school year the HOD was alone, the other teacher with academic and training in geography was occupied with the school Directive Council (and was only in charge of two classes) and the HOD was obliged to wait for the appointment of other teachers.

They did what was usually done in this school, they adapted the planning sent by the ME to the different classes.

Teachers in charge of one school year met together and adapted this planning to the specific conditions of a certain class (in order to motivate pupils).

Usually the sequence order of topics prescribed in the official syllabuses was followed because three teachers had no academic and training qualifications in geography and it was easier for them to follow this sequence, which was the same as that presented in textbooks.

Besides this one teacher was still studying at university and often missed classes.

It was not compulsory to follow this order, but it was proposed and teachers agreed to it.

Nevertheless, in the 9th year after the study of rural space, urban space was

studied. The study of industry, not very important in the area, was done through group work.

Influences on planning and teaching

The Inspector does not influence planning.

The school's Directive Council supports teachers' initiatives.

The school has a global plan in which the main long term aim is the school's pedagogic autonomy.

The work started with the elaboration of a new school internal regulation, with the collaboration of teachers, students and administrative personnel, and a reflection on values and attitudes (attitudes of students to students, students to teachers, teachers to students, students to parents, students to administrative personnel...) and a new relationship with the environment.

The head of department took the initiative of creating an 'Eco-club', that would contribute to creating a new relationship with the environment. This club would start its activities in 1990/91.

Constraints

One constraint was teaching time. Two teaching periods per week specially in the 7th year are not enough to do practical exercises needed to facilitate pupil learning.

Nevertheless, the main constraint was that some geography teachers had no academic and training qualifications in geography.

The HOD and the teacher graduate in history, but who taught geography, for two years, helped these teachers, working in a group with them.

There were also financial and resources constraints.

Teaching activities

During 1989/90 the department did not organize any study visit.

The department gave its collaboration to external exhibitions, for instance, one on Macao.

At the end of the school year, a 'school week' was organized and the department organized an exhibition of pupils' work and a projection of slides.

In order to motivate pupils teachers used different strategies, for instance group work; sometimes pupils were in charge of animating the class. They did not use games for teaching.

In the school there were several interdisciplinary initiatives, namely concerning environmental education and the creation of an 'Eco-club'.

Just now, environmental education concerned specially biological aspects, but the head of the geography department would make efforts to enlarge the contributions of geography to environmental education.

The school established links with an English school (previously with a German one).

Evaluation

At the end of the year teachers were asked to indicate the syllabuses they completed and those that they did not.

The majority completed them but some teachers did not finish the 7th and 9th years syllabuses for the reasons indicated above. Teachers who covered the whole syllabuses content were obliged to simplify it (or reduce the number of objectives to be attained).

Syllabuses

The 7th year syllabus includes many abstract concepts.

The new syllabuses were not sent to the school.

Nevertheless the head of the geography department of school E sent copies of the proposals of the new syllabuses to this school and a teacher was sent to participate in the discussion about these proposals held in school E.

School G

Before Portuguese secondary education become comprehensive, school G was a technical school.

Students

The school has around two thousand, six hundred students (one thousand, five hundred - day classes; one thousand, one hundred - evening classes).

It has all the secondary education years (from 7th to 12th) during the day and the Complementary Course and 12th forms in the evening. It also has some technical courses.

Geography teaching

Geography is taught in the Unified General Course (7th, 8th and 9th years), in the Complementary Course ('study areas' A and D) and in the 12th year during the day; and in the Complementary Course and 12th year in the evening.

Staff

The school has seven geography teachers, five graduates in geography, two with teacher training in geography and three undergoing teacher training. Another teacher is a graduate in anthropology and another has three years of the geography course.

Four teachers have day classes, one evening classes and three day and evening classes.

In the school there is a teacher in charge of teacher training.

Head of department

He is thirty-five years old, graduate in geography ('licenciatura') trained in geography (1986/87), with eight years of teaching geography.

He has already been head of department for two years.

In 1989/90 he attended two in-service courses, one organized by the Geography Teachers Association and another on ecology, organized by a magazine publisher.

He is a member of the Geography Teachers Association and of the Portuguese Geographers' Association.

Teaching resources

In the school there is no specially equipped room for geography teaching but one year ago a teaching room for geography and biology was designated.

In the school there is an overhead projector, a slide projector and a video-recorder (but the possibility of using them is limited). There are a few maps and globes, two compasses, six thermometers and twenty-eight slides (for geography teaching).

There are a few books, textbooks and some specialist books in geography.

There are reprographic facilities only for assessment tests and there will be computer facilities only in 1990/91.

The departmental allowance in 1989/90 was sixty-five thousand escudos (about two hundred and forty-five pounds).

A geographical encyclopedia and some meteorological equipment were acquired.

Textbooks

They did not change textbooks because new textbooks elaborated in accordance with the new syllabuses will replace the old ones in due course.

Nevertheless each teacher was given the possibility of changing any textbook with the agreement of his/her pupils.

Planning process

The HOD for some time, was the only graduate geography teacher.

The head discussed the syllabuses with the other teachers and chose the more important topics. The sequence order of topics established in the syllabuses was altered (for instance in the 9th year it was decided to study urban space after population, which is more relevant for pupils than industrial space, because industry is not important in the area of Évora).

He does not believe in formal planning (that is done during teaching training), but in a formulation of purposes, and adapts teaching to the class and to pupils' characteristics.

For evening classes, it is not possible to do formal planning because students frequently miss classes, and they are very heterogeneous.

The HOD, with the other teachers without academic and training qualifications in geography used to do work plans (and not a formal planning).

Two years ago the school started to have teacher training in geography and four graduate geography teachers were appointed to the school, one to orientate teacher training and three others to be trained.

Curriculum planning was then done by the teaching training group.

Influences on planning and teaching

The Inspector does not influence planning.

The school's Directive Council gave in 1989/90, a bigger departmental allowance to the geography department because it was the one with the biggest lack of resources.

In the department, priority was given to the proposals for planning and activities presented by the teacher training group.

In this school the teacher training groups are of great importance.

The school global plan did not include an overall topic, but different proposals specially formulated by the teacher training groups.

In the teacher training groups special importance is not given to the school dynamic ('área escola'); this was the case in previous models of teacher training.

Constraints

There are financial, equipment and resources constraints.

A room for geography teaching was allocated only one year ago, and this room is shared with biology. There are two or three groups of biology teachers and one of geography teachers undergoing teacher training and these groups have priority in relation to the occupation of the geography room.

Another constraint is the pupils' initial preparation (with deficiencies) and the number of pupils in a class (too big). (For one term, the head had a 12th year class with forty-six students. It was split in the second term).

Some teachers are in charge of too many years and classes (one year the HOD had been in charge of classes from five different years).

Nevertheless the main constraint has been the lack of teachers' academic and training qualifications in geography. Until two years ago only the HOD had these qualifications, the other teachers, without qualifications for teaching geography, were appointed after the beginning of the school year and very often resigned and were replaced by others.

In 1989/90 there were only two teachers without academic and training qualifications in geography.

There are timetable constraints for geography teachers to meet together (it was only possible to meet half an hour at lunch time).

Teaching activities

Priority was given to the teaching training group's proposals of activities.

A meteorological station was established with the help of the technologies ('trabalhos oficinais') teacher training group.

Together with the history teacher a study visit to Lisboa was organized. Pupils visited the Belém area (monuments, museums and planetarium).

Visits to Évora (urban aspects) were also organized.

Pupils from the teacher training teachers classes drew a compass card on the school courtyard pavement and made an astrolabé.

The school plan includes proposals of interdisciplinarity but in fact these were little developed.

Geography and history teachers developed some work on the Portuguese Discoveries together.

Assessment

Each teacher does his/her pupils assessment.

The HOD, during his teacher training proposed to develop observation and assessment objective tests (as well as to apply the new technologies to geography teaching) but his proposals were turned down.

Evaluation

At the end of the school year teachers indicate in relation to each syllabus, if they had completed it or not.

The head asked the collaboration of his students to evaluate the teaching-learning process.

Syllabuses

According to the head syllabuses content is not adequate to school reality; there is a lack of equipment and teaching resources; the content is not motivating to students; there is strong competition from the mass-media.

The 12th year syllabus, timetable and assessment are equal for day and evening classes. According to the HOD they should be different because students are different and evening students very often miss classes.

There are difficulties in completing the 7th and 12th years syllabuses (content too extensive, insufficiency of students previous preparation, teachers appointed after the beginning of the school year).

The 7th year content is completed in the 8th year.

There was no deep discussion of the new reform proposals.

The proposals of new syllabuses for the 10th and 11th years were sent incomplete (one page in two) to the school three days before an enlarged discussion meeting that took place in Lisboa.

The HOD went to the meeting.

Some teachers present there had not received any proposal of new syllabuses. There was already a more recent version (altered) of the proposal of new syllabuses (more recent than this received three days before). The HOD asked for photocopies of that version but was told that it was not possible to give photocopies to all teachers present at the meeting.

He obtained the new 7th year syllabus not long ago.

The HOD from the other school in Évora invited him and the other geography teachers to discuss the new syllabuses, but it was not possible to send anybody to the meeting.

He does not believe in the efficacy of the new education reform.

The head made many criticisms of the teachers training process taking place now ('Formação em exercício').

School H

Students

School H has around one thousand, one hundred pupils (eight hundred and fifty pupils - day classes and two hundred and fifty - evening classes).

It has all the secondary education years (day and evening classes). It also has a technical course on ornamental rocks.

Geography teaching

In day classes, geography is taught in the 7th, 8th, 9th and 12th years; in evening classes there is environmental sciences in the 7th year and geography in the 10th, 11th and 12th years.

Staff

In the department there are three teachers, one graduate and trained in

geography, two graduates in anthropology without training in geography.

One teacher has day classes, two, day and evening classes.

Head of department

He is thirty-two years old, a graduate in geography ('licenciatura' - University of Lisboa), trained in geography (1985/86), with a total of fifteen years in teaching, thirteen in geography.

He has already been head of department for two years and in charge of teacher training for one year.

He taught Didactics of Geography at the University of Évora and was consultant for the 10th and 11th years new syllabuses.

In 1989/90 he was also the school headmaster ('Presidente do Conselho Directivo').

Teaching resources

There is a small room in the school for a maximum of ten students ascribed for geography and biology teaching.

In the department there are a variety of teaching resources, including a small library with textbooks, atlases and some books on geography addressed to young people.

There are reprographic facilities.

In 1990/91 the school will be involved in the 'Minerva' project.

Textbooks

New textbooks were not chosen because two graduate teachers in geography will be appointed to the school in 1990/91, and then the problem of maintaining or not, the same textbooks will be discussed.

The HOD likes the textbooks used in 1989/90 and they have an auxiliary book with activities for pupils, that is very useful.

Planning process

The HOD does annual and quarterly planning with the other teachers. This planning is followed by all teachers. (The HOD also plans each teaching unit).

Firstly he used the planning he did during teacher training and ameliorated and altered it in successive years. (Probably nothing remains from the original planning).

The sequence order of content prescribed in the official syllabuses is modified according to students suggestions and according to the content not taught in previous years, (in order to complete it).

They do the planning in a way that could contribute to motivate students and modify it during the year, according to students reactions.

Influences on planning and teaching

The Inspector asked to see the planning done throughout the school year, but did not give any comments. He advised on the use of different strategies and agreed with the alteration of the sequence of topics prescribed in the official syllabuses.

The school's Directive Council supports teachers' initiatives.

Parents do not influence on planning (they rarely go to the school).

Constraints

The school has a large area of influence, (specially in relation to the 12th year) and many pupils live in places far from the school. Public transport is not good and pupils have no time to study at home (some pupils leave home at 6 a.m. and arrive at 7, 8, 9 p.m.). There is no school transport.

Students attending evening classes often miss school.

There are financial constraints but the school is located in an industrial area and some enterprises give some financial aid to school initiatives.

The main constraint has been the appointment of teachers without adequate academic and training qualifications (some are still studying in the university).

The HOD helps these teachers.

Teaching activities

In the department teachers use different teaching strategies.

Group work is often used.

The head organized a project on agriculture for the 9th year, three years ago.

They organize interdisciplinary study visits. In the last school year a study visit was organized with the history, biology and chemistry teachers (for 12th year students).

Every year an interdisciplinary week is also organized and the geography department collaborates in several activities.

Other interdisciplinary activities are difficult to implement because the syllabuses are not articulated and the staff changes frequently. Many teachers stay only a few years in the school.

There are no links with other schools.

Assessment

Each teacher elaborates his/her tests.

There are meetings to discuss assessment criteria.

Evaluation

There are periodical meetings to evaluate the teaching-learning process (monthly).

Syllabuses

The 7th year syllabuses presents some aspects difficult for the pupils' age.

The new syllabuses were not sent to the school.

The head went to the Geography Teachers Association annual meeting and obtained there copies of the proposals for the new syllabus.

The HOD was chosen as a consultant for the 10th and 11th years new syllabuses and answered a questionnaire about these syllabuses.

NOTES

CHAPTER 1

- 1 'Comprehensive Law on the Education System', Law 46/86 of 14/10/1986 ('Lei de Bases do Sistema Educativo').

There is a translation into English by D. Illingworth published by the GEP, Lisboa, 1987.

- 2 According to Pires (1987, p. 6) this law, adequate for the Portuguese Constitution would permit 'clarificar a actual estrutura do sistema escolar e evitar a tomada de medidas avulsas, por vezes incoerentes ou contraditórias, pelos sucessivos governos bem como para proporcionar um quadro estável que viabilizasse uma reforma global e articulada do sistema educativo'.
- 3 'Comissão de Reforma do Sistema Educativo (1988) - Proposta Global de Reforma - Relatório final'.
- 4 Decree-Law 286/89 of 29/8/1989.

CHAPTER 2

- 1 In the district of Castelo Branco the major percentage of the workforce belong to the secondary sector: 35.3%; and in the district of Portalegre and the Açores to the tertiary sector, respectively 39.6% and 43.3%.

Nevertheless the two above districts and the Açores also have a large percentage of workforce in the primary sector, district of Castelo Branco 33.0%, district of Portalegre 36.0% and the Açores 31.5%, respectively.

- 2 Again the relative percentage of population from 0-19 years old, varies from region to region (Table 2.6 and Map 2.9).

Map 2.9 shows the regions where this percentage was below average (in white with crosses) and those where this percentage was above average (in black) (Nazareth, 1988, p. 65 and 66).

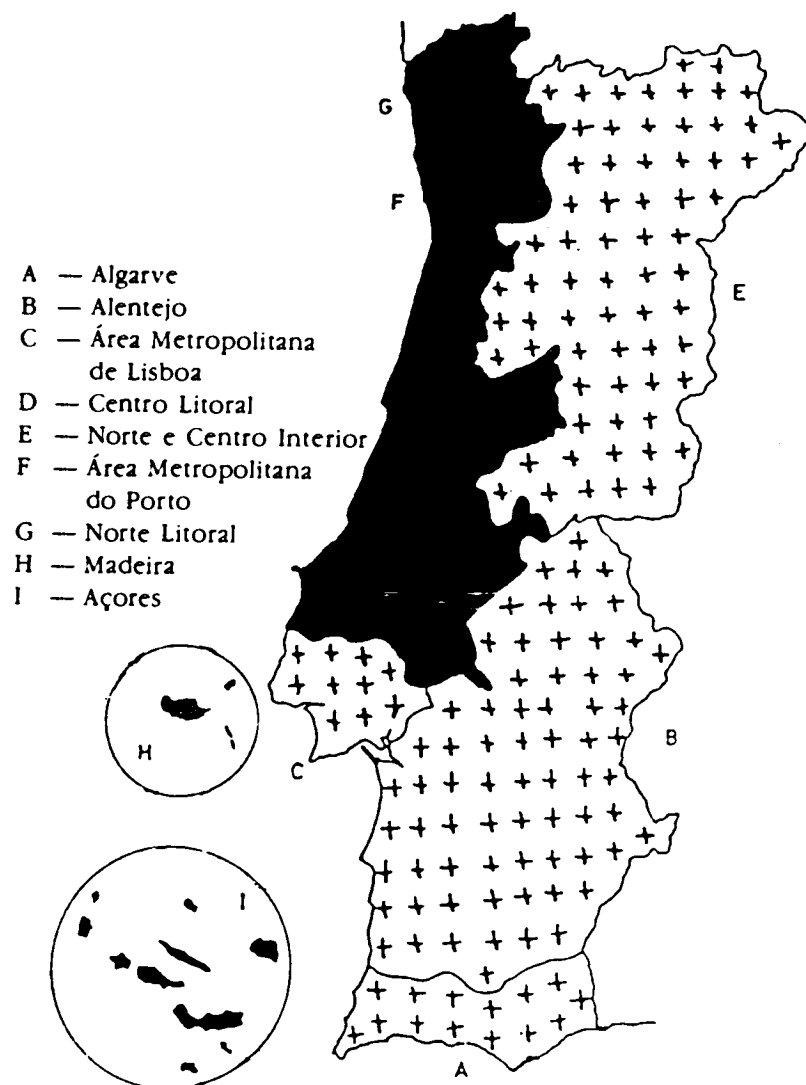
Table 2.6

**Percentages of population from 0-19 year old in
Portugal and in Portuguese regions
(1980)**



Regions	%
Algarve (A)	28.0
Alentejo (B)	28.3
Área Metropolitana de Lisboa (C)	30.3
Centro Litoral (D)	33.4
Norte e Centro Interior (E)	31.2
Área Metropolitana do Porto (F)	38.1
Norte Litoral (G)	43.2
Madeira (H)	41.8
Açores (I)	39.3
Portugal	34.3

Source: Nazareth, J. M., "A demografia portuguesa do século XX: principais linhas de evolução e transformação", in *Análise Social*, vol. XXI, ICS, 1985 - (Nazareth, 1988, 65)

ENVELHECIMENTO NA BASE



LEGENDA:

		%
	— pouco envelhecido	33.4 — 43.2
	— muito envelhecido	28.0 — 31.2

Map 2.9

*Portugal - Percentage of population from 0-19 year old in Portuguese regions in 1980.
 (Nazareth, 1988, 66)*

CHAPTER 3

- ¹ In Graves (1979) 'Curriculum Planning in Geography' (p. 25, Figure 2.3) 'an objectives or linear model of curriculum planning' derived from Hilda Taba's work (Figure 3.2) is presented.

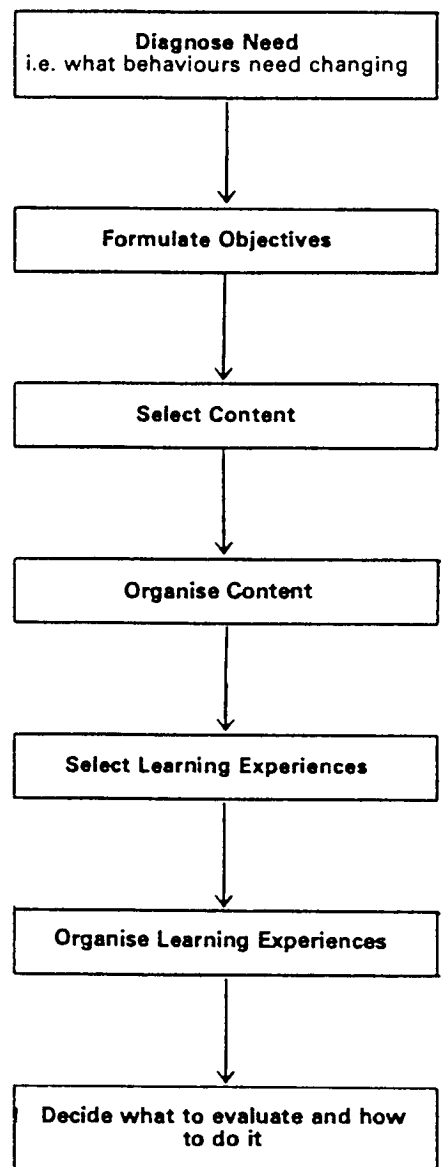


Figure 3.2

An objectives or linear model of curriculum planning.

Source: after Taba, 1962

(Graves, 1979, 25)

- 2 The problem of curriculum integration will be approached in relation to geography.
- 3 Lawton (1989, p. 43) in reference to England (he points out that there are special problems in Wales) indicates some of the arguments in favour of the principle of a national curriculum. 'First for example, it has been asserted, by HMI and others, that all children should be considered to have a right of access to a worthwhile curriculum (an entitlement curriculum); second, that there should be as much consensus as possible on the general aims and objectives of compulsory schooling; third, an egalitarian view, stressing equality of access to educational chances on a national basis, minimizing local differences in the quality of education offered; fourth, that common schools should transmit a common culture by means of a common curriculum; fifth, that is important for all schools to share common standards which would ensure reasonable levels of teacher expectation; sixth, that a national curriculum facilitates the geographical mobility of pupils; and seventh, that a national curriculum increases the accountability of schools and teachers'.

CHAPTER 4

- 1 The great majority of Portuguese geography teachers could read French and Spanish books, but were not able to understand books written in English. At university level the regional synthesis paradigm was dominant and Portuguese geography students could read mainly French works and a few Spanish ones, besides obviously, the Portuguese ones.

- 2 Maya (1971 b), the author of the 'lesson plan', presented in the n.2 of the same bulletin, 'Cadernos de Geografia - Boletim do Ensino Liceal, nº 2, 1971, p. 88-96', an article on group work in geography (the given example was a work on Australia). Among the authors she indicated: Carl Rogers (translated into Portuguese); M.A. Banny and L.V. Johnson; J. Luft (translated into French).

- 3 A translation into English by D. Illingworth for the GEP is included in this work.

- 4 Biddle (1982, p. 285) states that 'In the 1960s the tremendous growth in factual information, due to the increase of expenditure on research and the improvements in technology for processing data led philosophers and psychologists in education to question the emphasis on factual learning in the schools. Their conclusions were that the memorization of facts in a discipline or subject placed too much emphasis on the end-products of other people's thinking and not enough on the process of their own thinking; that disciplines were not to be defined by the objects they study but by the kinds of questions they asked and the conceptual structures they used; and that students should learn the skills of thinking and the ways of ordering reality so they could learn more efficiently in the future (Greco, 1967; Graves, 1975, 1980; Mc Caskill, 1977)'.

- 5 'The prophets of the curriculum reform movement at that time were Jerome Bruner and Joseph Schwab. They asserted that we must "have the courage to exclude" and develop materials which would help students understand and be able to use "the structure(s) of the discipline". There was a conventional wisdom within the Education Directorate of the National Science Foundation... and amongst the academics who had been brought

into the curriculum reform movement. This suggested that selection of the important ideas (concepts, structure) should be made by the elites of the discipline, who alone have the insight to distil the truly profound ideas. Then the work of developing the classroom materials which illustrate and teach these ideas can be developed by other academics and teachers.

HSGP shifted to a model of leadership consistent with this conventional wisdom.' (Helburn, 1983, p. 20).

- 6 This project was not influential in Portugal probably due the fact that in the 60's the regional paradigm was still dominant at higher and secondary education levels and the materials had not been translated into Portuguese.

In a recent book on didactics of geography (Alexandre and Diogo, 1990) a reference to the HSGP but not to the Schools Council Geography Projects appears.

- 7 It is also known as the 'Avery Hill Project' because it was to be based at Avery Hill College of Education in London.

- 8 It is interesting to point out that in the GYSL (1981 b) some of these key principles are modified. For example, instead of Geography being concerned with 'Prediction', in 1981 it is with 'Perception - an appreciation that decisions about the environment are very often related to the mental images which people have of particular places'; the key principle that Geography in schools exists primarily to prepare pupils for life in a modern industrial society and make them adaptable to meet the demands of this society is not mentioned.

- 9 It is also known as the 'Bristol Project' because it was to be based at the University of Bristol School of Education.

- 10 It is interesting and important to read the statements of S. Jones, J. Rolfe and P. Cleverley (1981) about the introduction of the 'Geography 14-18 Project' in the schools where they were teaching, which were chosen as pilot schools.

- 11 Other Schools Council Projects concerned in different ways and measures geography.

Other organizations than the Schools Council, sponsored projects and some concerned geography too.

Due to the scope and the objectives of this work, only titles of some of these projects are indicated.

Schools Council Projects:

'The Environmental Studies Project'; 'The Project Environment'; 'The Social Studies 8-13 Project'; 'History, Geography and Social Science 8-13 Project'; 'The Integrated Studies Project'; 'The Humanities Curriculum Project'.

Other projects:

'The Geography Schools and Industry Project' (GSIP) established by the Geographical Education; 'The Computer Assisted Learning in Upper School Geography (CALUSG) Project'.

- 12 It is interesting to point out that Kelly (1982, p. 61) argues that to integrate separate areas of knowledge clearly 'is a problem, since it raises certain practical difficulties for school organization; but, ..., it is not a logical problem since, if it were, either we would have been aware of it long ago or we should by now have encountered real difficulties in dealing with long-existing kinds of integrated knowledge, such as the study of geography'.

CHAPTER 5

- 1 Lawton (1983) states that it is however important to make a distinction between rejecting the classical humanist ideology because it is essentially anti-democratic, and rejecting either the idea of cultural heritage or the importance of subjects and subject-matter. According to the author 'cultural heritage' somewhat differently defined, is important for all young people, not simply for the future leaders of societies.

- 2 'Estatutos do Collegio Real de Nobres da Corte, e Cidade de Lisboa', 1761, Oficina de Miguel Rodrigues.

- 3 'Compêndio de Geographia e Historia antiga e moderna e Chronologia' by J.P.C. Casado Gerales, 1826, and 'Lições elementares de Geographia e Chronologia com seu atlas apropriado e accomodado ao estado de conhecimentos e mais circumstancias dos alumnos da Aula de Arithmetica, Geometria, Geographia e Chronologia do real Collegio das Artes da Universidade de Coimbra' by Frei José da Sacra Familia, 1830 (Quoted from Deusdado, 1896, p. 5).

- 4 Heleno Junior (1919) relates some developments in geography teaching before the reform of secondary education of 1836. He quotes the works of Ribeiro (1871-1889) and Deusdado (1896) as sources of information.

- 5 Decree of 17/11/1836. The reform of primary education is dated the 15/11/1836 and the higher education reform is dated the 5/12/1836.

 Manoel da Silva Passos, known under the name Passos Manoel, was then the 'Secretário de Estado dos Negócios do Reino'.

- 6 Decree of 20/9/1844.

 Costa Cabral was the promoter of this reform.

- 7 The study of the subjects mentioned in the previous reform was maintained, with the exception of Physical Education, that was then suppressed.

- 8 As in the previous reform, the curriculum was not the same in all schools but

History, Chronology and Geography were to be taught in all 'liceus'.

- 9 To the 'Liceu' of Lisboa, a Commercial School ('Escola de Commercio' or 'Secção Commercial') was annexed, which had already been created in 1756 under the name of 'Aula de Commercio'. Until 1866 this situation was maintained; the Commercial School of Lisboa was then created. In 1852 technical industrial education and agricultural education were created. In 1869 the Commercial and Industrial Institute of Lisboa (joining commercial and industrial education in the same institute) was founded.

In 1844 for the Commercial School the study of Geography, specially Commercial geography, Chronology and History were prescribed. It was a two years course.

- 10 On 12th August 1854, in the 'Liceus' of Lisboa, Porto and Coimbra the study of 'Arithmetic, Elementary Algebra, Geometry, Trigonometry and Mathematical Geography' were prescribed. (Carvalho, 1986, p. 594).

- 11 'Regulamento para os Lyceus Nacionaes' of 10/4/1860.

- 12 These two subjects should be taught by the substitute teacher of history. Since 1844 there were two categories of teachers: 'professores' and 'substitutos'.

- 13 On 4th December 1860 for the 'liceus' of second class, a two years course of elementary mathematics which included the study of mathematical geography, was prescribed.

The study of History and Geography, especially of Portugal and its Colonies was a one year course, taught by one 'professor'.

- 14 On 9th September 1863 a new regulation for the 'liceus' was published. The study of 'Geography and elementary History in the first year was suppressed; and for the study of Chronology, Geography and History especially of Portugal and its Colonies, in the 4th year, daily classes (by a 'professor') were prescribed. Each class lasted 2 hours.

The teaching of mathematical geography was maintained.

- 15 Deusdado (1896) states that in 1863 was the first time that syllabuses for several secondary education subjects were developed. In some cases these syllabuses were sent in manuscript to the 'liceus', but they were never printed.

- 16 In 1870 the 'Ministério da Instrução Pública' was created.
- 17 Decree of 23/9/1872. Regulation of 31/3/1873.
- 18 In the 2nd class 'liceus' the same subjects were to be taught in the 3rd and 4th years (the last year). Respectively 3 and 4 classes per week .
- 19 'Diário do Governo' nº 231 of 12/10/1872.
- 20 On 10th November 1875.
- The official approval of the first statutes was on 29th January 1876.
- 21 'Estatutos e Regulamento Provisório da Sociedade de Geographia de Lisboa', Lisboa, 1876 in Publicações da Sociedade de Geografia de Lisboa (SGL), I, 1876-1879.
- 22 The members of this section were mainly teachers of different establishments of higher and secondary education, but also army officers and other professionals.
- The President (Marianno Ghira) was a Professor from the 'Escola Politécnica'. This school's aims were 'to prepare students for the Army and Navy schools, and give higher scientific education to other students'.
- See Boletim da SGL, 1, 1875.
- 23 'Pareceres' n. 1 of 29/11/1876, in Publicações da SGL, I, 1876-1879.
- 24 On 11th November 1876 one of the members of this Committee J. A. Simões Raposo presented a memo on the teaching of Geography and History of Portugal in primary schools.
- He pointed out the importance of geography teaching for the development of the Portuguese colonies.
- He stated that at primary school, pupils in geography classes, only memorized names, and instead there was a need to show the influence on Man of location, climate, configuration and nature of the country where he lives and how he modifies the environment.
- He argues that in geography classes the use of drawings, pictures, photos and specially of maps were to be compulsory (Raposo, 1877).
- 25 'Estudo crítico, philosophico das poderosas e incontrastadas influências do

Meio, na accepção mais lata da expressão: - Este o coroamento e a synthese da sciencia geographica. (...) A geographia bebe nas outras sciencias muitos dos seus elementos, em compensação presta à historia, à politica, e à arte de guerra - serviços eminentes' in Pareceres - nº 1 - Publicações da SGL, I, 1876-1879 (p. 17).

26 The authors of this article analysed the following textbooks:

- 'Botelho, M. F. de Medeiros - *Noções Elementares de Geographia Mathematica, Physico-Geológica, Política e Atmosphero-Meteorológica.*, Coimbra, Imprensa da Universidade, 1861.

- Id., 2ª ed., Coimbra, 1867.

- Id., 3ª ed., *Curso de Geographia Antiga e moderna, Chronologia e História da Geographia para uso dos lyceus.*, Lisboa, 1878.

- Id., 4ª ed., *Curso de Geographia e Chronologia para uso dos lyceus.*, Porto, 1891.

- Carneiro, B. J. da Silva - *Elementos de Geographia e Chronologia, para uso das Escolas*, Coimbra, Imprensa da Universidade, 1844, (2ª ed., 1848; 5ª ed., 1858; 8ª ed., 1868).

- Pereira, J. Felix - *Compêndio de Geographia*, Lisboa, Imp. Commercial, 1852, (2ª ed., 1853; 7ª ed., 1868; 13ª ed., 1888).

- Sá, A.F. Moreira de - *Compêndio de Geographia Elementar para uso dos alumnos que frequentam o primeiro anno do curso geral do lyceo*, Lisboa, Typ. Universal, 1860, (2ª ed., 1861; 3ª ed., 1870; 4ª ed., 1878).

27 Decrees of 14/6/1880, 12/8/1886, 20/10/1888 and 29/10/1888.

28 The 1880 syllabuses prescribed for the 3rd year, the study of physical geography terminology, ancient geography, particularly of Greece, of Italy and of the Roman Empire, 'general features' ('geographia geral') of the geography of all continents, and physical and political geography of Portugal and its colonies (beyond the study of Ancient History); for the fourth year: cosmography; systematic physical geography; ethnography (human races); political geography (including the study of 'organized states', languages, religions and transports; and economic geography of Portugal; (besides the study of the History of the Middle and Modern Ages and of Portugal). Decree of 14/10/1880.

- 29 in Boletim da SGL, 1881, 9-10, p. 674-676
- 30 They stated that there were excellent elementary books and other more developed works in German, English and French, which everybody knew and could be conveniently used in geography teaching. They quoted the works of Levasseur, Perigot, Cortambert and Pigeonneau (France); de Fief (Belgium); Lawson, Gill, Boardman and Hughes (England) and the atlases and maps of Sidow, Berghaus, Stieler and others published by Justus Perthes in Gotha, by Philips and Son in London, and the maps in relief of Levasseur and Kleinhans.
- 31 See Deusdado (1896), p. 28-30.
- 32 In 1888 the syllabuses from 1886 were altered to adapt them to the reform, but in 1889 new syllabuses were adopted.
- See 'Programmas do Ensino Secundário' (Decree of 20/10/1888) and 'Programmas para o Ensino Secundário', Lisboa, Imprensa Nacional, 1889.
- 33 Decree of 22/12/1894; regulations of 18/4, 14/8 and 14/9/1895.
- 34 'Programma para o Ensino da Instrução Secundária' Lisboa, Imprensa Nacional, 1895.
- 35 Botelho, José Nicolau Raposo (n.d.) Geographia geral. (9ª edição), Porto .
- Wagner, Herman (1893) Atlas escolar, Gotha, Ed. Justus Perthes.
- 36 Decree of 29/8/1905 and Decree of 3/11/1905 (syllabuses).
- 37 Quoted from Carvalho (1986, p. 620).
- 38 Until this date the study of these subjects was prescribed for two school years in 1860, 1872, 1880 and 1886; only for one year in 1863. Nevertheless the years changed from reform to reform (1860 - 1st and 5th years; 1863 - 4th year; 1872 - 5th and 6th years; 1880 and 1886 - 3rd and 4th years).
- 39 It is important to point out that in 1880 the study of physical and political geography of continents and of Portugal and its colonies was prescribed before the study of cosmography and of physical and political geography of the globe (though it included a 'Complement of Geography of Portugal' to end the study).

In 1886 the study of physical geography of the globe preceded that of

continents, of Portugal, of cosmography, a study more in depth of the continents and finally a study of the political geography of the globe (and history of geography).

In 1895 physical and political geography of the globe was the content prescribed for the two last years of secondary education (6th and 7th years).

In 1905 in the first three years the study of elements of political and economic geography of the globe preceded that of physical geography of the globe and that of Portugal and its colonies and of continents. At the same way the study of cosmography and of systematic physical, political and economic geography (prescribed for the 6th year) antecedes this of the Chorography of Portugal (and of the elements of history of geography) prescribed for the last year of secondary education (the 7th).

- 40 A. Girão (1940) quotes the work 'Chorographia de Alguns Lugares' (16th century) from Gaspar Barreiros, a notable work from the time when the Portuguese had a special interest on the knowledge of lands, seas and airs.

Gaspar Barreiros not only described natural phenomena but tried to explain them, giving special importance to natural causes (see also Girão and Morais, 1950 and Girão 'Um geógrafo português do século XVI' in Boletim do Centro de Estudos Geográficos, Coimbra, 1950, 1, Vária, p. 59-60).

Guerreiro (1984) quotes the article of J. Romero Magalhães (1980) 'As descrições Geográficas de Portugal: 1500-1650 - Esboço de problemas' in Revista e História Económica e Social, 5, and points out that in Portugal chorographies were written from the XVI to the XIX centuries and quotes two good examples, both about the Algarve from Frei João de São José (1577) and from João Baptista da Silva Lopes (1841).

But as Girão (1940) points out, in the 17th and 18th centuries there was a decline in geographical studies and the chorographic works then published were not scientific and some were even imaginary.

In the XVI century geography was already taught at the University of Coimbra. The Jesuit University Colleges prepared students for the Missions; they needed to know the land and the people where they would work, and these colleges became centres of culture and geographical information.

In Coimbra geographical aspects in the mathematics and physics courses were then taught, and probably the first topographical survey of Portugal was made by Alvares Seco in 1560 linked with this teaching.

Portuguese professors taught then at Jesuit Colleges in Paris (see 'Coimbra e a geografia em Portugal no século XVI' in *Boletim do Centro de Estudos Geográficos*, 1952, 4-5, Vária, p. 114-116).

In 1857, a law not approved by Parliament, proposed the creation of Higher Education Arts studies. These studies would include the study of geography.

In Coimbra the study of geography already existed in the 'Aula de Aritmética, Geometria, Geografia e Cronologia', from the 'Real Colégio das Artes' (Amaral, 1981 a).

- 41 On the 17th February 1876 the 'Commissão Central Permanente de Geographia' was created; in 1880 it started to be called 'Commissão Central de Geographia' (Decree of 12/8/1880). It was in charge of collecting and organizing all the documents that could contribute to the development of scientific knowledge concerning geography, ethnology, history, archaeology, anthropology and natural sciences of Portugal and specially of its Overseas Possessions.
- 42 A. Girão (1951) wrote an article about a description of the Centre of Portugal made by G. Perry in 1860 and transcribed his travel notes which show evidence of his rigorous landscape observation (followed by the transcription of the travel notes).
- 43 G. Pery quotes as a main source of the foreign statistical data Maurice Block's 'Statistique de la France' and from the same author 'L'Europe politique et sociale' (1869).
- 44 G. Pery quotes, among others, the studies of Barbosa du Bocage and Brito Capello on natural sciences; Nery Delgado on geology; Rebelo da Silva on population and agriculture; Moraes Soares and Bernardo Lima on agriculture; Costa, Carlos Ribeiro and Nery Delgado on archaeology and so on.
- 45 In 1968 Carlos Ribeiro and Nery Delgado had already published a report on the distribution of trees in Portugal 'Relatório acerca da Arborização Geral do País' (Quoted from Ribeiro, 1978).
- 46 The five maps were the following: 'I - Carta Concelhia; II - Carta do relevo, orographica e regional; III - Carta dos arvoredos (Carta xylographica); IV - Carta agronomica; V - Carta da povoação concelhia'.
- 47 The most famous expedition started from Lisboa on the 7th July 1877. One of the expedition organizers Serpa Pinto, crossed by land the south of Africa

from Benguela (Angola) to Durban (Natal), where he arrived in 1879.

- 48 Decree n. 5 of 24/12/1901.
- 49 'Portaria de 7/8/1902, mandando abrir concurso para provimento das cadeiras de história e geografia do Curso Superior de Letras' in 'Diário do Governo' n. 177 of 9/8/1902.
- 50 Decree of 8/10/1902 in 'Diário do Governo' of 20/10/1902.
- 51 Decree of 9/5/1911 and 'Regulation from the Faculties of Arts of the Universities of Lisboa and Coimbra' of 19/8/1911.
- 52 The Faculties also give the degree of 'doctor' and in 1918 the 'licenciatura' examination was created.
- 53 Reform of 1957:

'Licenciatura' in Geography

Disciplines

1st year

Physical Geography I	annual
Mineralogy and Geology	annual
Botany	annual
Zoology	annual

2nd year

Physical Geography II	annual
Human Geography I	annual
Geology	annual
Topographical Drawing	semestral
Optional discipline	annual

3rd year

Human Geography II	annual
Systematic Ethnology	annual
Pre-History	annual
History of Portugal I	annual
Optional discipline	annual

4th year

Geography of Portugal	annual
Geography of Tropical Regions I	annual
Regional Geography	annual
Regional Ethnology	annual
History of Portuguese Discoveries	annual
Optional discipline	annual

5th year

Geography of Tropical Regions II	annual
Applied Geography	annual
Research Seminar	annual
Dissertation	

- 54 In 1948 two-year courses for 'professores-adjuntos' to solve the problems of a shortage of teachers in technical schools, was created. The 'professores-adjuntos' could teach two disciplines, for example, geography and mathematics. These courses were abolished in 1968.

- 55 For instance, see Telles (1924 b).

- 56 In Telles (1908 b).

During the last years of his life Silva Telles initiated a work on the same topics, but he did not complete it.

- 57 A. Girão states about Ferraz de Carvalho, 'Géologo e géografo consumado, era ao mesmo tempo investigador de gabinete e investigador de ar livre. Quantas vezes, nos seus trabalhos de campo, os alunos, sempre mais novos do que ele, tinham dificuldades em o acompanhar por vales e serras do Norte ao Sul do País!' in Girão and Morais (1955, quotation, p. 2).

Nevertheless, Rebelo (1987) states that he did not do much fieldwork, and as far as the relief and hydrography of Portugal was concerned, he mainly reflected on the works previously published about the subject.

Feio (1984, p. 30) states: 'quant au travail personnel, au travail sur le terrain, il ne les pratiqua jamais'.

- 58 In fact in France for more than one hundred years, a large number of geographers adopted the division of France into river basins, as more appropriate for geographical studies.

This idea came from Philippe Buache that in 1752 presented his 'théorie des grands bassins'.

This theory despite severe criticism, appeared in geographical works for most of the 19th century.

Nevertheless, as Feio (1984) points out, in 1922 'la mode en avait déjà passé à l'étranger'.

A. Girão (1953) wrote an article entitled 'As bacias fluviais como base de estudo regional' explaining the reasons why he chose, 31 years before, a river basin for his thesis.

59 Lautensach regrets that Girão did not study the evolution of the population and of economic activities of Viseu.

60 Feio (1984) argues that these works were not of good quality (p. 30), but as Lautensach points out in his bibliography of Portugal, the Geography of Portugal of A. Girão was the first developed Geography of Portugal written by a Portuguese person and had a large number of maps and photos.

61 'Une nouvelle carte de la répartition de la population au Portugal'; 'Les dépôts de type «raña» au Portugal' (in collaboration with M. Feio); 'Montanhas Pastorais de Portugal' (in collaboration with M. A. Plácido); 'Les transformations de l'habitat et des cultures dans la contrée de Pinhal Novo (Portugal)' (in collaboration with J. R. Lisboa); 'Paysages ruraux en Méditerranée et en Afrique Noire Occidentale'; 'Sur les divisions géographiques dans les études régionales'.

62 In the original 'formation'.

63 Regulation of 9/9/1919.

64 Decree of 12/4/1928.

65 Decree-Law 43864 of 17/8/1961.

66 Decree-Law 205 of 20/6/1972.

67 See Gaspar, 1985.

68 Decree of 29/3/1911.

69 The Ministry of Public Instruction was first created on 12th June 1870 and abolished on 27th December of the same year.

That Ministry was created again on the 5th April 1890 and abolished on 3th March 1892 (due to financial reasons).

Finally, it was created again on 7th July 1913 (quoted from Carvalho, 1986).

70 Reform of primary education. Decree of 31/12/1956; and Decree-Law of 28/5/1960.

71 The following decrees and documents concerning reforms of secondary education and syllabuses were analysed:

- Decree 3091 of 17/4/1917 - (Reform of secondary education);
- Decree of 14/7/1918 - (Reform of secondary education);
- Decree 4799 of 8/9/1919 - (Regulation of secondary instruction);
- Decree 5002 of 28/11/1918 - (Syllabuses);
- Decree 6132 of 26/9/1919 - (Curriculum plan and syllabuses);
- Decree 6316 of 30/12/1919 - (Instructions);
- Decree 7558 of 18/6/1921 - (Regulation of secondary instruction);
- Decree 12425 of 2/10/1926 - (Curriculum plan);
- Decree 12594 of 2/11/1926 - (Syllabuses);
- Decree 16326 of 15/1/1929 - (Complementary course syllabuses);
- Decree of 27/8/1930 - (Curriculum plan);
- Decree 18885 of 27/8/1930 - (Syllabuses);
- Decree 20369 ('Diário do Governo' of 8/10/1931 'Suplemento') (Syllabuses);
- Decree 20741 of 2/1/1932 - (Reform of secondary education);
- Decree 24526 ('Diário do Governo', I Série, n. 235 of 6/10/1934) - (Syllabuses);
- Law 1941 of 11/4/1936;
- Decree-Law 27084 of 14/10/1936 - (Reform of Secondary Education);
- Decree 27085 of 14/10/1936 - (Syllabuses);
- Decree-Law 36507 of 17/9/1947 - (Reform of secondary education);
- Decree 36508 of 17/9/1947 - (Statute of secondary education 'liceal');
- Circular 1418 ('Diário do Governo', I série, n. 231 of 4/10/1947) (Syllabuses - 'liceal' education);
- Decree 37112 of 22/10/1948 - (Syllabuses - 'liceal' education);
- Decree 39807 of 7/9/1954 - (Syllabuses - 'liceal' education);
- Decree-Law 47480 of 2/1/1967 - ('Institution of the Preparatory Cycle');
- Decree 48572 of 9/9/1968 - (Preparatory Cycle curriculum plan);
- 'Portaria' 23601 ('Diário do Governo' of 9/9/1968) - ('Preparatory

Cycle syllabuses);

- 'Programas a ensaiar ao abrigo do Decreto-Lei nº 48547, 1972' - (Experimental syllabuses of the 3rd year of the new 1st cycle of Secondary Education).

72 In 1917, it was said that the aim of secondary education General Course was to give pupils a range of knowledge, useful by itself and which could contribute to the development of pupils' faculties; the Complementary Course was designed to improve students' education and prepare them for higher education courses.

In 1918 (at the time of Sidónio Pais' dictatorship) it was stated that secondary education aimed at the formation of an elite which, directly or indirectly, had a fundamental influence on public affairs.

The same year new syllabuses were published and in the following year (1919) instructions to standardize the teaching in all the 'liceus'. In relation to geography it stated that in the first two years the subject should contribute to the development of the faculties of observation and comparison, but in the 3rd, 4th and 5th years it argued that geography teaching should give pupils a rigorous and detailed knowledge of the geographical and economic conditions of different countries, and in the 6th year (of the Arts Section) and in the 7th year (of the Sciences Section) students should study systematic geography, giving Portuguese examples. They should also acquire a knowledge of the Chorography of Portugal and its colonies.

These instructions are a good example of aims ascribed to geography teaching during this period.

In 1932 it was stated that secondary education should provide the elements of a 'general culture' needed to prepare students for living in society and for higher education courses.

In 1936 the aims of secondary education ('liceus') were limited to giving students a 'general culture' useful for life (previously it was also to prepare them for higher education, this reappeared in 1947).

In 1936, for the 4th, 5th, 6th and 7th years it was stated that 'cultural sessions' should be organized with the main aim of students acquiring a knowledge of the Colonial Empire, of Portuguese art and of civic education.

The 'Mocidade Portuguesa' should collaborate, in all the secondary education schools (public and private) to develop in pupils the physical capacity,

character, a devotion to Fatherland and a sense of order, discipline and military duty.

The 1936 syllabuses for the three first years stated that the main aim of the discipline of Geographical and Natural Sciences was knowledge of Earth, and in the 7th year of the Earth in the Universe, of its physical life, its elements and evolution (the study of geography was then not prescribed for the 4th, 5th and 6th years).

By 1948 it was stated that in the first cycle, the study of Geographical and Natural Sciences had as its main aim, 'knowledge of Earth, as the environment of Man' and the development of pupils' minds giving them different kinds of information and the possibility of seeing, observing, distinguishing, reasoning, searching for analogies and arriving at conclusions.

In the 2nd cycle, the development of pupils' capacities would be dominant but information must be given in greater depth. In geography there was a need to give a general knowledge of the Earth, and knowledge yielding 'minimal culture' (through observation, analysis, comparison, selection of the fundamental elements, deduction).

In the 3rd cycle information would be dominant in relation to development, because the teaching was specialized and prepared students for higher education.

In 1968 for the two first years of secondary education (the Preparatory cycle), the curriculum included the study of History and Geography of Portugal.

It was stated that the study of history was essential 'to make the child believe in the excellence of our Fatherland and of our civilizing mission' and the 'knowledge and the love of our history can be identified with the knowledge and love of our territory'.

It was then the time of the Colonial war. Portuguese children should know the history and the geography of 'Portugal in Europe, Africa, Asia, how the Portuguese were able to improve the territory and the people and how they should go on with their mission progressively better'.

In 1970/71 the 3rd year syllabuses were modified and in the observations in the annex it was said 'What matters, fundamentally is the formative value - and not the informative one - of Geography'.

In 1972 experimental syllabuses were elaborated for the 3rd year of secondary education.

73 The following syllabuses from the Commercial and Industrial Schools were analysed:

- 'Programas professados nas Escolas Elementares de Comércio', Lisboa, Imprensa Nacional, 1915;
- 'Programas das disciplinas professadas nas Aulas Comerciais', Lisboa, Imprensa Nacional, 1920 (Decree n. 6981 of 6/9/1920);
- 'Programas dos Cursos das Escolas Comerciais, aprovadas por Decreto nº 11490 de 9/3/1926', Lisboa, Imprensa Nacional, 1926;
- 'Programas do Ensino Profissional Industrial e Comercial', Lisboa, Imprensa Nacional, 1963 ('Portaria nº 13800 de 12/1/1952, alterada pelas Portarias nº 15007 de 27/8/1954 e 15546 de 19/9/1955');

The following decrees concerning these schools were also analysed:

- Decree-Law 37028 of 25/8/1948;
- Decree 37029 of 25/8/1948.

74 In 1934 the study of elements of cosmography was prescribed only for the Sciences Section.

75 See Ferreira, 1980.

76 Leite Pinto was then Minister of Education. He was in charge from the 7th July 1955 until the 4th May 1961.

77 History was then linked with Philosophy at University level.

78 They quote the excursion's pedagogical advantages indicated by Branon on 'The Teaching of Geography'.

79 In the secondary schools museums were organized with maps, samples of economic productions of Portugal and the Colonies, instruments used by the rural population of Portugal and Colonies, and so on.

80 Decree n. 4649 of 13/7/1918.

81 Decree n. 18973 of 16/10/1930.

82 Santa Rita (1929) held a conference at the SGL on the teaching of Geography in Primary School. He said that geography teaching was not only

to memorize names, to know by heart localization on maps, but its aim was the study of the Earth's surface and the distribution of different facts on it: description and explanation.

- 83 Heleno Junior explains the reasons why geography is important for education. For the author geography is: 'o patamar das ciências físicas, é a chave da história, é a base do comércio; porque a geografia dando a conhecer o mundo, tem uma considerável importância para o agricultor, para o industrial e para o comerciante; porque a geografia nos explica o carácter dos povos e a formação das nacionalidades; porque finalmente a cultura geográfica nos explica muitas vezes a grandeza das nações.

A geografia, desenvolvendo o amor pela natureza, engrandece o espírito, desperta e aviva os sentimentos mais nobres; estudando a terra, como habitação humana, esclarece os laços de solidariedade e "*dignifica*, segundo a expressão de Herder, *o sentimento de humanidade em todas as suas formas*".

A geografia, dando a ideia de ordem e de harmonia, desenvolvendo os sentimentos estéticos, exercitando o espírito de observação, de análise, de comparação, o sentido das relações e dos grandes encadeamentos, contribue poderosamente para a educação do espírito, para o aperfeiçoamento de todas as faculdades, ao mesmo tempo que, no ponto de vista utilitário, presta na vida os maiores serviços.

Estudando a superfície da terra, a influência dos elementos, interpretando a natureza, a geografia mostra ao homem as dificuldades e perigos e ensina-lhe a dominar o meio, a obedecer às leis naturais.

Com tal importância a geografia é a ciência do futuro e (...) ela contribuirá, mais do que qualquer outra para a superioridade humana e para o progresso da civilização.' (Heleno Junior, 1919, p. 141-142).

- 84 About geography teaching the same author states that the study of geography, in accordance with pupils' psychology, should be done following four different phases of evolution; perceptive and conceptual; representative; descriptive; rational and explanatory.
- 85 Firstly in Biblos, secondly in a volume, Coimbra, 1936.
- 86 The 2nd edition of the Atlas is from 1958; the 2nd edition of the Geography of Portugal is from 1949-51 (the author added Açores and Madeira then); the 3rd from 1960.

87 He quotes only the name of A. Gama.

88 The following syllabuses were analysed:

Primary education

- 'Programas do Ensino Primário Elementar', MEC, 1980.

Preparatory education

- 'Ensino Preparatório. Programas para o ano lectivo 1974/75', MEC, 1974.
- 'Ensino Preparatório. Programas para o ano lectivo 1981/82', MEIC, n/d.

Secondary education

(Unified General Course)

- 'Curso Secundário Unificado Programas. Sétimo Ano de Escolaridade', MEIC, 1975;
- 'Ciências Sociais. Indicações Metodológicas Gerais', MEIC, 1975;
- 'Programas de Geografia - 7º Ano de Escolaridade' (7th year):
 - 1977/78;
 - 1978/79 ('Despacho do SEEBS' of 27/7/78');
 - Circular ES 27/80 of 11/8/80;
 - 'Ofício-Circular' 16/83 of 19/1/83;
 - Circular 144/85 of 15/7/85;
 - Circular 170/85 of 10/10/85;
- 'Programas de Geografia - 8º Ano de Escolaridade' (8th year):
 - 1977/78;
 - 1978/79 ('Despacho do SEEBS, 27/7/78');
 - 'Portaria 574/79 - Diário da República nº 252, 31/10/79';
 - 1980/81 ('Despacho do SEEBS', 7/8/80);
 - 'Ofício-Circular 16/83, 19/1/83';
- 'Programas de Geografia - 9º Ano de Escolaridade' (9th year):
 - 1980/81 ('Despacho do SEE, 10/7/80');
 - 1983/84
 - 'Ofício-Circular 139/83, 14 /7/83'.

(Complementary Course)

- 'Programa Área A'

- '10º ano':
 - 1978/79 ('Despacho do SEEBS, 27/7/78');
- '11º Ano':
 - 1979/80 ('Despacho do SEEBS, 17/8/79');
 - 1983/84;
- 'Programa Área C'
- '10º e 11º Anos ':
 - 1981/82 ('Despacho do SEEJ, 21/7/81');
- 'Programa Área D'
- '10º Ano';
 - 1978/79 ('Despacho do SEEBS, 17/8/78');
- '10º Ano ou 11º Ano':
 - 1979/80 ('Despacho do SEEBS, 25/7/79');
 - 1983/84
- Propaedeutic year
 - 'Geografia - Ano Propedêutico', 1977/78, MEIC, 1977
- 12th year
 - 'Programa' (Syllabus)
 - 'Junho de 1980'
 - 1981/82
 - 1982/83
 - 1983/84

89 The Preparatory Education curriculum included the discipline of Natural Sciences. The study of the elements of the climate and other physical aspects were prescribed in the syllabuses.

There are teachers with geographical preparation, teaching this discipline, whose content includes mainly physical and biological aspects.

90 'Despacho Normativo 140-A/78 in Diário do Governo nº 141-I série de 22/6/1978'.

91 Decree-Law 491/77 of 23/11/1977.

92 Decree-Law 240/80 of 19/7/1980;
'Portaria 684/81 de 11/8/1981'.

- 93 A Educação Cívica Politécnica não é uma disciplina no sentido comum da palavra. É, antes, um campo de acções interdisciplinares onde os conteúdos próprios de cada disciplina podem alargar e aprofundar o conhecimento da realidade próxima. O critério politécnico que deve caracterizar esta área não obriga ao estudo das técnicas mas, principalmente, ao conhecimento dos princípios básicos da produção moderna e do trabalho em geral. Não é de excluir em certos locais, se isso for possível a participação organizada dos alunos no verdadeiro trabalho produtivo, dando prioridade ao seu efeito educativo.' (Ministério da Educação e Investigação Científica, Programas - Sétimo ano de escolaridade, 1975, p.113).
- 94 Decree-Law 519 - T1/79 of 29/12/1980;
Decree-Law 217/80 of 9/7/1980;
'Despacho' 358/80, 22/10/1980;
Decree-Law 580/80 of 31/12/1980.
- 95 In some schools there was no trained teacher and the candidate was only guided by the full-time specialist who was in charge of several other schools to whom he/she should also give guidance.
- 96 Decree-Law 150-A/85 of 8/5/1985;
Decree-Law 412/85 of 16/10/1985;
Law 8/86 of 15/4/1986;
Decree-Law 405/86 of 5/12/1986.
- 97 Decree-Law 287/88.
- 98 There was a model of transition for students obtaining a bachelor's degree until 1989/90. According to that model the education disciplines courses and teaching practice took place only after the student had completed a bachelors degree course in a scientific specialization.
- 99 In the Faculty of Arts of Lisboa, the curriculum of the first year is common to the three bachelors degrees in geography, ('licenciaturas' in 'Geography and Regional Planning' 'variant' 'Physical Geography'; in 'Geography and Regional Planning' 'variant' 'Human Geography' and in 'Teaching of Geography').

In the Faculties of Arts of Coimbra and Porto the curriculum is common to the two first years and the curriculum of the 3rd year only differs in one discipline.

CHAPTER 6

- 1 The source about population used by the researcher, was the DGES.

However, this data differs from that presented in the Ministério da Educação, Gabinete de Estudos e Planeamento, Análise Conjuntural, 1984, p. 52, whose source was Calado, A.M. et al., 'O professor em números - ensino secundário - 1981/82 e 1982/83', GEP, 1984.

The population (the total of geography teachers from the state secondary schools) indicated by Calado, A.M., op. cit., is 1547.

- 2 Again the data presented by Calado, A.M. (1984) differs from the data indicated by the DGES as is shown in Table 6.68.

Table 6.68

Comparison of data concerning teachers' professional qualifications

Teachers' professional qualifications	Sample		Direcção-Geral do Ensino Secundário		Calado	
	F	%	F	%	F	%
Teachers with a degree in geography and with teacher training (a)	365	49.2	608	40.6	666	43.1
Teachers with a degree in geography but without teacher training (b)	229	30.9	513	34.2	514	33.2
Teachers without a degree in geography and without teacher training (c)	148	19.9	377	25.2	367	23.7
Not known	9	missing	-	-	-	-
Total	751	100.0	1 498	100.0	1 547	100.0

(a) 'Professores Profissionalizados'.

(b) 'Professores Eventuais com Habilitação Própria'.

(c) 'Professores Eventuais sem Habilitação Própria'.

CHAPTER 8

- 1 After 25th April 1974 secondary education was unified and in the 7th year of schooling the disciplines of geography and history were withdrawn from the curriculum and replaced by the discipline of 'Social Sciences' (see Chapter 5, p. 169).
- 2 The syllabus included the study of eleven topics organized in three groups: the first essentially with geographical aspects; the second with economic aspects and the third with socio-cultural ones (see Chapter 5, p. 169).
- 3 The syllabus included only general objectives.
- 4 Luísa Cortesão one of the course organizers published in collaboration with Arminda Torres two books on evaluation which were very influential on teacher training.

The first of these books was published in 1981. (See bibliography).
- 5 The researcher had a similar experience. In fact interdisciplinarity became difficult due to the lack of appropriate teachers' preparation.
- 6 He had done a master's course in education in the USA.
- 7 For children that started schooling in 1987-1988 or after, compulsory schooling is nine years now

APPENDIX E

- 1 O projecto Minerva desenvolve-se nas seguintes vertentes:
- a) “a inclusão do ensino das tecnologias da informação nos planos curriculares do ensino não superior”;
 - b) “a introdução das tecnologias da informação como meios auxiliares do ensino não superior”;
 - c) “a formação de orientadores, formadores e professores para o ensino das tecnologias de informação e para a sua utilização como meios auxiliares de ensino”.
- (Quoted from ‘Análise Conjuntural 87 - Série A: Base de Dados, Estatística e Análise Conjuntural’, GEP, 1989).

BIBLIOGRAPHY

ORGANIZATION OF REFERENCES

References are organized in two sections:

- 1 - References contained in the text.
- 2 - Other references not contained in the text.

The second section do not intend to be seen as a bibliography of all other sources not directly quoted in the text that influenced the author, but only include some references that are important to the study and can help future researchers.

Legislation and other primary sources concerning geographical education in Portugal are not included since they are indicated for each subject.

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